SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of January 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✱, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✱, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33,647 & 8. 9 h. Dry bulb. °	Wet bulb. °	21 h. Dry bulb. °	Wet bulb. °	Wind. 9 h. Direction	Force, 0—6.	21 h. Direction	Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	30·205	30·399	✱44·0	✱33·9	34·9	34·1	34·9	34·1	W	0·25	Calm	0	0·00	2 W	1 St.	n. d.	10 Fog		Fine, hazy; evening thick fog.	1
2	30·510	30·590	39·9	✱28·1	28·4	28·0	39·9	37·8	W	1·0	W	2·0	·01 (snow)	0	0	1·5 NWly	2 Cuf.		Fog, with thick h.-fr.	2
3	30·546	30·497	45·1	39·1	42·8	40·0	44·7	41·3	SW	2·0	WSW	~~2·5~~ 3	·00	1·5 NNW	6 Sor-Ci-st.	3 W: 5 Sc.-Cu	mut. var.		Fine, cloudy.	3
4	30·438	30·360	✱44·7	✱40·8	41·7	39·0	41·2	39·0	W	2·5	W	2 & 2·5	·00	1 WNW / 2 & 3 W	4 Ci-cu. / 3 Cuf. & scud	2·5 W	10 St. & scud.		Cloudy; fine.	4
5	30·211	30·040	42·8	36·9	42·1	39·2	41·9	38·8	W	2¼	WSW	2-~~3~~	·00	2·5 W	8 Cuf.	3 W	2 Scu.		Fine; mostly sunny.	5
6 ✱	29·978	29·985	46·3	✱38·0	42·7	41·0	38·0	37·0	WSW	2·0	Calm	0	·00	2 SW / 2¼ W	10 Ci. of. / (2) Cuf.	? / n. d.	first Ci-st. / (5?) faint St.		Fine, cloudy; sunny intvs. bet. 12h. & 14h.	6
7	29·940	29·833	38·9	✱28·9	30·9	30·8	38·9	37·7	E	0·5	E	1·0	·05	n. d.	10 Fog.	n. d.	10 thick St.		Morng. dense F., with thick h.-fr.; day cloudy, with r. sho. bet. [13h. 40m. & 15h.; hl. sho. at 14h.	7
8	29·652	29·492	44·0	36·3	40·6	38·0	42·9	40·3	SE	2·0	S	~~2~~-3	·00	2 SW	10 Cuf.	n. d.	10 Sor-Ci-st.		Cloudy; fine.	8
9	29·269	29·218	44·7	✱37·4	44·0	41·8	37·9	36·1	ESE	~~1~~·5	Ely	0·5-~~1·5~~	·06	2·5 by W / 1·5 S	7 Cuf. / 1 Ci-st.	2·5 WSW (ac.)	6 Sc. & cu.		Cloudy; sho. at intvs. after 13h. 30m.	9
10	29·488	29·696	39·8	✱35·9	36·3	34·9	38·0	37·0	W	2·0	W	1·0	·02	0	0	2 Wly	10 N.		Fine, hazy during day; overcast, sho. aft. 18h.	10
11	29·659	29·559	42·7	34·3	38·3	38·0	36·2	34·3	ESE	1·0	ESE	~~0·5~~-1	·01	2 S	8 Cuf.	2¼ SSE	5 Cuf.		Cloudy, with short sunny intvs.; sho. bet. 7h. & 8h.	11
12	29·728	29·933	✱41·0	35·9	37·7	36·0	36·9	35·9	E	2¼	E	1·0	·00	2¼ E	10 Cuf.	2 E	10 Cuf.		Fine, cloudy; sli. sho. at times.	12
13 ✱	30·129	30·232	40·6	35·9	36·2	35·0	37·7	35·0	W	0·25	WNW	1·0	·01	1·5 SSE	10 Cuf.	1 S	10 Cuf.		Fine, hazy.	13
14	30·215	30·146	40·0	35·5	37·9	35·1	38·0	35·7	SSE	1·5	ESE	1·5	·00	2¼ SW	10 Cuf.	2 SW	10 Cuf.		Fine, cloudy.	14
15	29·983	29·852	41·3	37·2	38·9	36·2	39·9	38·8	S	~~2 & 2·5~~	SE. var.	0·5-~~1~~	·05	2 WSW	10 Cuf.	n. d.	10 Sor-Ci-st.		Cloudy; shs. of r. & sl. after 17h.	15
16	29·811	29·873	40·8	35·9	37·4	36·0	37·9	37·0	S	0·5	Wly	0·5	·01	1 Wly: q Sor-Ci-st.		2¼ W	10 N.		Fine, cloudy; li. sho. aft. 19¼h., & const. r. at 21h.	16
17	30·090	30·041	48·0	37·2	38·9	38·0	48·0	45·0	W	1·0	SW	~~2·5~~-3·5	·11	0	0	?	10 St.		Morng. F.; day cloudy, with sli. sho. aft. 16½h.; wg. sgly at times.	17
18	29·933	30·010	55·3	✱42·2	55·0	52·1	42·2	39·3	WSW	~~2·5~~-3·5	W	2-~~3~~	·10	3·5 WSW	10 Cuf.	0	0		Cloudy; equally; brisk sho. at intvs. after 15h.	18
19	30·037	30·170	45·5	39·8	42·9	40·4	40·7	38·7	WSW	2·5	W	~~1·5~~ & 2	·04	2 WNW	2 Cuf. & Ci-cu.	2 WNW	9·5 Ci-cuf.		Brisk sh. at 6h. 45m.; day fine, mostly sunny.	19
20 ✱	30·252	30·249	43·8	36·1	36·9	36·0	43·0	42·0	W	1·0	W	1·5 & ~~2~~	·01	2·5 N: 1 Cirrus. [at 9½h. sky 7-10ths covered with Ci-strus]. 0	0	1·5 NWly	3 Ci-cu.		Fine, sunny; thick h. in the morning.	20
21	30·357	30·547	46·1	✱38·1	44·1	41·0	38·1	37·0	WNW	2·0	N	0·5	·00	2 N	3 Cuf.	0	0		Fine; sunny at times.	21
22	30·565	30·460	41·7	31·6	33·1	32·0	39·5	38·3	W	1·5	W	2·0	·00	2 NNEly	1 Sor-Ci-cu.	0	0		Fine, hazy.	22
23	30·457	30·451	48·2	33·6	41·7	41·0	43·1	42·0	W	1·5 & ~~2~~	W	~~1·5~~ & 2	·00	3 W	5 Cuf.	n. d.	3 faint St.		Fine; morng. thick h.-fr.; day mostly sunny.	23
24	30·423	30·363	48·0	42·1	45·6	44·2	46·2	44·1	W	2·0	W	2-~~2·5~~	·01	0·5 W / 3 W	3 Ci-cuf. / 3 Cuf.	2·5 W	6 Cuf.		Fine, sunny.	24
25	30·251	30·159	49·8	45·6	47·3	45·2	48·8	46·2	WSW	3·0	W	~~2·5~~ & 3	·00	3·5 W (ac.)	10 Sor-Ci-st.	3 W (ac.)	10 St. & ac.		Fine; cloudy, with sunny intvs. bet. 13h. & 14h.	25
26	30·185	30·402	✱48·8	✱39·2	47·1	45·6	39·7	34·3	W	1·5	NW	2-~~2·5~~	·08	2 W east	10 Cuf.	n. d.	1 (Corr) St.		Mostly cloudy; const. r. from noon till 14h. 30m.	26
27 ✱	30·555	30·312	41·5	✱28·0	28·9	27·1	41·5	39·2	NWly	0·5	WSW	~~2·5~~-3·5	·00	2 NWly: 1 Ci. in SE sky. 0	0	3·5 WSW	3-7 ac.		Fine, sunny; thick h. in the morg.; sli. S. at 20½h.	27
28	30·165	29·970	47·6	40·9	44·7	42·9	46·9	44·0	W	~~2½~~-2¾	WSW: S gusts 2·5	~~3~~	·00	1·5 Wly: few fair cu. Ci-st. / 3 WSW: 7 Cuf. & ac.		? / n. d.	6 St.		Fine, cloudy.—Wind force very moderate at 21h.	28
29	29·343	29·821	49·0	✱38·0	48·8	46·8	39·1	36·2	W	2·5 & ~~3~~	W	~~2~~ & 2·5	·15	2·5 W	10 N.	0	0		Const. r. from 6h. 20m. till aft. 10h., then fine; equally at times.	29
30	29·398	29·728	50·0	38·3	47·2	45·2	42·0	39·1	W	3·0	W	2 & ~~2·5~~	·04	1·5 W / 2 & 3 W	3 Ci-cu. / 1 Cuf. & 2 Sc.	n. d.	3 faint St.		Varble; shwg sqs. bet. 3h. & 6h.; sho. at intvs. till 11h., then fine.	30
31	29·497	29·545	53·0	41·1	49·0	47·9	48·8	44·6	W	~~2·5~~-3·5	W	3·0	·01	3¾ W (ac.): 1 (faint) short Ci-st.		0	0		Cloudy; slight showers at times; equally.	31
	14 15 15	14 16 11	15 12	18 13	17 16	14 7	19 15	18 8												
Sums.	~~931~~ 930·270	~~931~~ 930·933	~~382~~ 379·9	~~441~~ 441·8	~~546~~ 543·0	~~398~~ 398·5	~~572~~ 572·5	~~558~~ 558·8			8 55·25		5 51·5	0·77	185		179			
"Corrected Means."	1 30·041	1 30·062	15 44·9	21 36·8	2 40·7	27 39·0	~~23~~ 41·0	27 38·9			1·78		1·66	0·77	6·0	5·9	5·8			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

Note.—On the 18th an earth-rocking motion (one oscillation) was felt at 6h. 53m. 15 sec. (or 10 seconds earlier or later), lasting about 2 to 3 seconds; no noise heard.

BAROMETER, "corrected Mean" at 9 h. = 30·041

"Corrected Mean" at 20 h. 45 m. = 30·062

Height 70 feet = ~~29·974~~ ·077

Mean, reduced to 32°, and Sea-level, = 30·051

Highest corrected Reading at 21h. Universal Time, on the 2nd = 30·590

Lowest corrected Reading at ~~15h.~~ Universal Time, on the 9th = 29·218

Difference, or Monthly Range, = 1·372

S.-R. THERMOMETERS (in shade, &c.) Highest in Month (corrected for Index Errors) on the 18th = 55°·3

Lowest in Month, (corrected for Index Errors), on the 27th = 28·0

Difference, or Monthly Range, = 27·3

"Corrected Mean" of all the Highest, (Col. 3), = 44·9

"Corrected Mean" of all the Lowest, (Col. 4), = 36·8

Difference, or Mean Daily Range, = 8·1

Calculated Mean Temperature of Month, = 40·8

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), = 40°·9

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), = 39·0

‡‡ Computed Temperature of Dew-Point, = 36·6

‡‡ Do. Elastic Force of Vapour, = ·216 ·216

‡‡ Relative Humidity (Saturation = 100), = 85 ~~82·5~~ 2·51

RAIN fell on 17 Days; Amount = 0·77 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	0	0	4	1	3	1	21	1	0	1·78	
21 h.	1	0	5	1	1	1	19	1	2	1·66	
Mean.	1	0	4	1	2	1	20	1	1	1·72 = 2·96 lbs.	

NOTATION USED IN GENERAL REMARKS.

a.	denotes	aurora.	m.	denotes	meteor.
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Observations made and Return verified by Greatest daily range = 14·6 on the 23rd

(Signed) James Bolam & George Redpath.

J.H. J.B.

Leith
Jan 1889

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SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of February 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✳, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✳, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33,647 & 8. 9 h. Dry bulb. °	9 h. Wet bulb. °	21 h. Dry bulb. °	21 h. Wet bulb. °	Wind. 9 h. Direction	9 h. Force, 0—6.	21 h. Direction	21 h. Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	9 h. Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	21 h. Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
																			[at 20h.	
1	29·391	29·235	54·8	38·4	49·8	47·9	40·0	38·0	W	2·0	W	~~2~~-3	0·06	2½ W (ac)	10 prev. Sor 6i-st.	n.d. 4-8	thin lower St.		Squally; li. sho. separated by sunny intvs.; brisk sho.	1
2	29·197	29·066	41·2	29·5	34·0	31·6	33·1	31·6	W	2·5	W	3+~~3·5~~ (S)	·12	2 W	2 Cuf.	n.d.	10 Sor 6i-st.	Thermo. read at 9h. 15m.	Variable; frequent S. sho.; sunny intvs.; eveng. squally.	2
														2 N	5 6i-st.					
3 ✳	28·996	29·742	42·7	32·9	39·8	36·2	39·9	36·2	NW	~~3·5~~+4·5	N	2·0	·00	3+4 NNW	2 Cu. + ac.	n.d.	2 St.		Squally; sunny at times.	3
4	30·278	30·368	40·4	34·1	36·9	34·2	35·0	32·0	N	~~2·3~~-3½	W	~~1·5~~+2	·00	2½ NNE	8 Cu.	n.d.: 4 St, becoming overcast at 21h. 10m.			Fine; sunny intervals during afternoon.	4
5	30·041	29·928	47·0	32·8	39·4	37·9	42·9	38·1	W	2+~~2·5~~	W	2·0	·02	2·5 W	10 Cuf.	2 NW	5 St.		Fine; cloudy, with sunny intervals.	5
6	29·928	29·778	43·0	35·3	40·6	36·8	35·9	33·1	NW	1·0	S Ely	0·5	·00	2 NNW	9·5 Cuf.	n.d.	10 Cuf. + St.		Fine; mostly cloudy.	6
7	29·887	29·767	35·9	29·1	32·9	31·5	35·3	32·1	NNW	2·0	SSW to W	1-~~2·5~~	·01	2 N: patch Cuf.		n.d.	10 prev. Sor Ci-st.		Fine, sunny; evening overcast.	7
8	29·103	29·237	44·3	31·9	37·5	34·0	34·9	32·3	W	3-~~3·5~~	NW	~~3~~-4 Rs	·18	2·5 W NW	1 Cuf.	2·5 NNW (Cu)	9 Cu. + Sor Ci-st.		Var.; r. sho. bet. 3h. + 5h.; brisk S. sho. at 11h. + 14h., + heavy [S. after 17h.; very squally.	8
9	29·624	29·771	34·9	28·1	~~28·7~~	?	~~28·2~~	?	NW	2·5	NW	X-2	·00	2 NNW	1 Cu.	2 NNW	0·5 Cu.		Fine, clear, sunny.	9
10 ✳	29·620	29·388	30·0	23·9	~~25·0~~	?	~~27·9~~	?	W	~~1·5~~+2	W	1-~~1·5~~	·00	2 NW: 10 Shetty 6i-st. 0	0	? 2 NE	? 10 Cu.		Fine, hazy. – So. ha. visible at times after 10h.	10
11	29·652	30·019	35·3	26·2	29·3	27·2	30·9	29·0	NW	1·5	NW	2·0 (S)	·02	2 NNE	2 Cuf.	2 NNE	1 Cuf.		Var.; sunny at times; S. + hl. sho. after 15h.	11
12	30·219	30·136	39·3	28·1	~~32·4~~	?	37·4	35·8	W	1+~~1·5~~	SW ~~1·5 to~~ W	2·5	·00	0	0	2 NNW 0	7 6i-st. 0		Fine; sunny at times; thick h. morng. – Su. ha. at 20h. 50m.	12
13	29·664	29·226	47·1	36·7	41·1	39·3	47·1	44·9	WSW	2+~~2·5~~	SW ~~2·5~~ to 4		·08	2 W by S	10 Cuf.	2 NW: 10 Sor 6i-st.			Cloudy; sho. till 9h.; + const. r. bet. 18h. + 20h. – Su. ha. at 3½h.	13
14	29·246	29·150	49·2	35·9	37·9	35·2	36·2	34·3	W	2·0	W	2·5	·02	2 NW: patch Cuf.		2 NW: 2 Sor 6i-st. 2·5 W NW	7 Cu. +		Strong sqs. at times till 3h.; day fine, mostly sunny; r. sho. [about 22h.	14
15	29·632	30·054	40·0	34·2	37·4	33·0	36·0	32·3	NW	2¼	NW var.	0·5	·01	2¼ NNWly	1 Cu. near W hor.	1·5 W NW: 7 Cuf. – Amt. variable.			Fine, sunny; evening mostly cloudy. – Lu. ha. at 23h.	15
16	29·740	29·682	49·7	31·0	39·9	37·2	46·0	42·0	SSW	2+~~2·5~~	W	3-~~4~~	·05	2·5 Wly	10 Sor 6i-st.	3 W	2 Cuf.		Cloudy; with sho. between 9h. and 11h., then squally.	16
17 ✳	29·955	30·082	52·0	43·1	46·9	44·0	50·9	48·9	WSW	2+~~2·5~~	W	2-~~3~~	·00	2¼ W	10 St. + Cuf.	n.d.	10 St.		Cloudy; sli. sho. at times.	17
18	30·135	29·953	53·2	48·1	52·3	49·4	48·8	47·0	WSW	~~2·5~~-3	WSW	3-~~4·5~~	·05	3 WSW	10 Cuf.	n.d.	10 N		Fine, cloudy; eng. squally, with sho. after 19½h.	18
19	30·195	30·213	49·4	40·1	42·9	39·2	40·9	38·1	W NW	2·0	W	2·0	·05	2 NWly	2 Cu.	0	0		Fine; sunny at times; evening cloudless.	19
20	29·913	30·015	49·1	39·4	42·3	40·3	44·1	40·0	W NW	2·0	W NW	2·0	·01	2 W NW	1 Cu.	n.d.	6 faint St.		Fine; cloudy, with sunny intervals.	20
21	30·269	30·315	44·1	34·4	38·9	35·2	34·8	33·0	NNW	1¾	Calm	0	·00	2 N	7 Cu.	n.d.	5 thin St.		Fine; mostly cloudy.	21
22	30·257	30·229	43·9	33·4	39·2	35·5	38·8	37·2	W	1¼	E	1+~~1·5~~	·00	Motion + a few ? : Amt. 10.		n.d.	10 N.		Fine, cloudy; rather hazy; drizz. sho. after 19½h.	22
23	30·341	30·461	40·0	34·5	36·2	35·2	34·9	31·0	NE	0·5	E	0·5	·06	2 ENE.	3 Cu.	n.d.	10 St.		Clear; sunny at times; drizz. r. early morng. + d. at 10h.	23
24 ✳	30·392	30·316	39·8	30·4	34·2	31·3	38·0	35·1	NE	1·5	NNE	2·0	·00	2 ENE: 1 6i-st in W Wly 2 ENE	8 Small Cu.	n.d.	5-8 loose St.		Cloudy; slight S. at 11h.	24
25	30·125	29·850	38·8	34·9	37·0	34·8	34·9	34·4	W NW	1·5	SEly	0·25	·15	Motion + a few ? : Amt. 10.		n.d.	10 N.		Coast; drizz. r. sho., with small hl. at 10h. + d. at 10½h.; const. r. after 14½h.; hazy.	25
26	29·925	29·847	39·1	32·9	34·9	34·0	33·3	32·1	ESE	2·0	W	0-~~1·5~~+1	·05	1·5 E	9 Cuf.	n.d.	4 faint St.		Variable; sunny at times; passing S. showers.	26
27	29·732	29·735	37·4	31·9	34·8	32·3	34·0	33·8	NE	2-~~2·5~~	E	2·5	·05	2 ENE	9 Sor 6i-st.	n.d.	10 N.		Cloudy; slight sun at times; sho. of sl. + S. aft. 19h. – So. ha. at noon.	27
28	29·880	30·027	36·5	31·7	34·1	32·2	31·9	30·0	E	2·0	E	2·0	·01	2 ESE (ac)	10 Sor 6i-st.	n.d.: 4, becoming 10, lower St.			Cloudy, with short sunny intvs.; passing S. sho.	28
Sums.	835·337	835·590	1198·1	942·9	~~1056·3~~	905·4	~~1057·0~~	932·3												
"Corrected Means."	29·833	29·843	42·8	33·7	~~37·7~~ 38·8	36·2	~~37·6~~ 38·3	35·9		2·06		1·90	18 days							
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. ..... = 29·833

"Corrected Mean" at 20 h. 45 m. ... = 29·843

Height 70 feet = ~~29·761~~ 0·77

Mean, reduced to 32°, and Sea-level, = 29·838

Highest corrected Reading at ~~21h.~~ 21½h. Universal Time, on the 23rd = 30·468

Lowest corrected Reading at ~~9h.~~ 9h. Universal Time, on the 3rd = 28·96 ~~29·1~~

Difference, or Monthly Range, ... = 1·465 ~~1·357~~

S.-R. THERMOMETERS (in shade, &c.) Highest in Month (corrected for Index Errors) on the 1st = 54°·8

Lowest in Month, (corrected for Index Errors), on the 10th = 23·9

Difference, or Monthly Range, ... = 30·9

"Corrected Mean" of all the Highest, (Col. 3), ... = 42·8

"Corrected Mean" of all the Lowest, (Col. 4), ... = 33·7

Difference, or Mean Daily Range, ... = 9·1

Calculated Mean Temperature of Month, = 38·2

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), ... = 38°·5

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), ... = 36·0

‡‡ Computed Temperature of Dew-Point, 32·7 ~~33·8~~

‡‡ Do. Elastic Force of Vapour, 186 ~~·194~~

‡‡ Relative Humidity (Saturation = 100), 80 ~~215~~

RAIN fell on 18 Days; Amount ..... = 1·00 In.

WIND. Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per hour.
9 h.	3	3	2	0	1	0	4	5	0	2·06	
21 h.	2	0	4	2	0	1	4	4	1	1·90	
Mean.	3	1	3	1	1	0	4	5	0	1·98 = 3·92 lb	

Note. – At noon of Friday, 22nd February, at Leith, Mr Redpath saw, about 20° to the south of the zenith, a bow in the sky, crescent shaped, with the horns which were somewhat ragged, turned from the sun, so that the bow was convex to the sun. It seemed to be part of a halo, but unlike the halo in this respect, that the colours were reversed – the violet being inside, and the red outside. At the time of observation the sky was covered with lower cloud of Cumulus-form types; and though the part of the sky where the crescent appeared was less densely packed than elsewhere, no upper cloud could be distinguished. It remained in sight about two minutes, and was then obscured by lower cloud. No other bows or halos were visible at the time.

G.R.

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

~~Observations made and Return verified by~~ Greatest daily range = 18°·7 on the 16th

(Signed) James Bolam + George Redpath

J. G.

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Leith
Feb 1889

SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of March 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✳, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✳, with a Fortin Standard.*

Days of Month.	BAROMETER, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	SELF-REGISTERING THERMOMETERS, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	HYGROMETER. Kew No. 33,647 & 8. 9 h. Dry bulb. °	Wet bulb. °	21 h. Dry bulb. °	Wet bulb. °	WIND. 9 h. Direction	Force, 0—6.	21 h. Direction	Force, 0—6.	RAIN. Amount in inches.	CLOUDS. 9 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	SPECIAL REMARKS.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
														n.d.	10 ci-st				[during day. - So. ha. at 9h.	
1	30·052	30·032	35·3	29·3	32·3	31·2	~~32·4~~	?	SE	1·5	E	1·5	0·01	0	0	n.d.	10 St.		Cloudy; brisk s. shs. bet. 7½h. & 7¾h. & li. s. shs. at intvs.	1
2	30·028	30·032	35·3	28·3	30·9	29·4	~~30·2~~	?	SE	~~1~~ 1·5	SEly	0·25	·00	1 4 SE	4 cu.	n.d.	9 St.		Fine; sunny at times; shs. of small hl. between 6h. and 7h.	2
3 ✳	30·029	30·024	37·0	26·1	28·9	27·8	27·9	26·7	SE	1·5	SE	1·0	·00	0 5 SE	1 cu.	0	0		Fine, sunny; evening, thick h.-fr.	3
4	30·027	30·018	37·7	21·0	26·2	25·3	~~30·2~~	?	SE	1·0	SE	2·0	·00	0	0	n.d.: 7–10 Species?			Fine, sunny; nearly cloudless during day.	4
5	30·008	29·940	38·9	28·8	31·9	31·0	36·0	35·0	SSE	1·0	WSW	1·0	·03	n.d.	10 N.	n.d.	9 thin St.	Therms. read at 9h. 30m.	Overcast; frequent s. shs.	5
6	29·761	29·591	42·8	32·8	41·9	38·7	40·8	38·0	SSW	2·0	SW	2·5	·02	2 SW: 10 Cor ci. & 6 cu.		n.d.	10, Species?		Cloudy; li. r. shs. at intvs. aft. 12h., with hl. at 16h. 10m.	6
7	29·481	29·330	40·8	37·3	39·0	37·0	37·9	37·0	S	1·5	NW	0·25	·03	n.d. 10 prob. Cor ci-st.		n.d.: 10 prob. Cor ci-st.			Overcast; drizzling shs. at times.	7
8	29·329	29·309	42·3	34·0	36·6	35·0	36·6	35·3	WSW	2·0	Calm	0	·00	2·5 SW	1 Cor ci-st.	n.d. (10 prob.)	Thin cheky ci-st.		[Cu. ha. in the evng. Fine, cloudy; sunny at times - So. ha. visib. bet. 12h. & 14h. &	8
9	29·326	29·404	46·0	34·9	39·4	35·6	38·2	35·0	WNW	2·5	WSW	~~2~~ 3	·00	1·5 S 0	7 ci-st. 0	0	0		Cloudy till abt. 13h., then sunny; hl. sh. at 15h. 40m.	9
10 ✳	29·597	29·843	47·8	35·3	39·3	36·3	38·9	35·0	W	2 & ~~2·5~~	WNW	~~2·5~~ 1·5	·02	3 W	2 cor ac.	2 ?	2 ?		Fine, sunny.	10
11	30·059	30·150	45·0	31·9	36·8	33·4	39·9	36·4	WNW	2·0	W	2·0	·00	2 Nly	1 cuf.	n.d.	10 St.-Nim.		Fine, sunny; evening cloudy; li. sho. at 21h.	11
12	30·118	30·044	53·3	39·1	48·7	46·0	48·9	47·0	W	~~2~~ & 2·5	W	3·0	·00	2¾ W	4 cu.	3·5 W (ac).	10 cuf. & ac.		Fine; cloudy, with short sunny intervals.	12
13	30·095	30·299	54·4	39·9	49·0	44·2	39·9	37·3	WSW	2 & ~~2·5~~	E	0·5	·00	2 NNW	4 cu.	2 NNW	4 cu.		Fine; sunny at times.	13
14	30·361	30·440	47·9	36·6	41·9	39·2	39·0	37·1	W	1·5	E	1·0	·00	2 NW: 10, prob. Cor ci-st.		2 NW	10 St.		Dull; hazy; slight sho. at times.	14
15	30·525	30·428	44·6	36·8	37·9	37·0	44·2	42·4	Variable	0·5	WSW	2 & ~~2·5~~	·07	2·5 W (ac).	10 N.	2¼ W	10 cuf.		Overcast; li. r. from 5h. 30m. till about noon.	15
16	30·231	30·205	55·1	42·2	48·6	46·4	42·9	39·1	W	3·0	WSW	2·0	·00	3·5 W	6 cu.	? 0·5 ci-st, lor in N & ely. 0	0		Fine; mostly sunny.	16
17 ✳	30·104	29·996	51·2	37·7	45·6	44·3	38·0	37·8	W	~~1·5~~	ENE	2·0	·07	2·5 W	10 cuf.	n.d.	10 N.		Overcast; drizzling r. after 15h. 50m.	17
18	29·772	29·588	41·2	36·7	38·9	38·4	39·9	39·4	NW var.	0·5	E	~~1·5~~ 1·0	·08	?	10 N.	n.d.: 10 prob. Cor ci-st.			Overcast; r. till 10½h., & drizz. shs. after 15½h.	18
19	29·349	29·077	43·3	37·9	40·4	39·2	39·9	39·1	ESE	1·5	ENE	2·0	·02	1·5 SSW	10 cuf.	n.d.: 10, Species?			Cloudy; drizz. shs. till 8½h.	19
20	29·036	29·419	40·4	35·9	39·2	38·1	36·4	32·5	ENE	4 & ~~2~~	NNE	4 cap.	·38	4 ENE	10 cuf.	3 NEly	10 cu.	Barom. at 5h. 45m. 28·964 (lowest).	[S. at 21h. Ocast; const. r. till noon, & li. pass. shs. aft. noon; very squally; slight	20
21	29·730	29·981	39·0	33·0	35·9	32·0	36·9	31·8	NNE	3·0	NNE	2·0	·00	2 NE	4 cu.	n.d.	3 cuf.		Cloudy, with sunny intvs.; li. s. between 10½h. & 11½h.	21
22	29·990	30·046	51·5	32·5	43·0	40·2	42·9	40·1	W	2·0	WSW	2·0	·00	2 N	3 ci-cuf.	n.d.	1 St.		Fine; mostly sunny.	22
23	29·882	29·858	51·8	41·0	46·7	43·2	51·8	49·4	WSW	~~2·5~~ 3	W	2·5	·00	3 WSW	10 Sc. & 6 cuf.	3 W (ac): 10 prob. Cor ci-st.			Cloudy; li. shs. at intvs. aft. 13h.; squally at times.	23
24 ✳	29·850	29·877	55·5	50·9	53·8	51·0	53·6	50·9	WSW	3 & ~~3·5~~	WSW	2 & ~~1~~	·01	2¼ W: 8 ci-st & 3·5 WSW: 6 cu. & ac.		3 W: 4–9 ac.			[at times. Cloudy, with sunny intvs. forenoon, & li. pass. shs. till 10h.; squally	24
25	29·698	29·692	53·6	42·5	49·1	45·0	43·1	39·5	W	3·0	WNW	~~4~~ 3·5	·08	3 W	2 cu.	2·5 WNW	1 cuf.		[with li. passing shs. Squally, with bright sho. bet. 4h. & 6h.; day mostly sunny,	25
26	29·892	30·212	45·0	37·2	41·1	35·7	37·6	32·3	WNW	2·5	N	2 & ~~2·5~~	·00	2 NNW	8 cu.	2 N	4 cu.		Fine, clear; sunny at times.	26
27	30·404	30·371	43·0	31·9	37·0	32·1	39·9	36·2	NW	1·0	W	1·0	·00	0	0	0	0		Fine, sunny. - Solar ha. at 15h. 45m.	27
28	30·281	30·271	54·6	37·0	45·7	42·2	50·1	48·9	W	2·0	W	2·5	·01	2·5 WSW (ac) 2 NWly	10 cuf. 3 Irreg. ci-st.	3 Wly: 5–9 ac.			Fine, cloudy; sunny intvs. dur. afternoon; sho. after 20h.	28
29	30·272	30·162	54·0	47·6	51·0	47·7	49·8	48·0	W	2¼	W	~~2~~ 2·5	·00	2·5 W	6 cuf.	2·5 Wly	10 cuf. & ac.		Fine; cloudy, with short sunny intvs. - So. ha. at 10½h.	29
30	30·000	29·944	53·8	43·9	51·0	48·2	43·9	40·9	W	2·0	WNW	2·0	·00	2 W	9 cu.	0	0		Fine; mostly cloudy; cloudless at 21h.	30
31 ✳	29·872	29·907	49·5	38·3	43·9	40·7	45·7	41·7	NW	1·5	W	1·0	·00	1·5 N	9 cu.	n.d.	7 cuf.		Fine; sunny at times; sli. sho. at 13h. & 18h. 45m.	31
Sums.	927·159	927·490	1431·6	1118·3	1271·6	1191·5	1350·1	1089·8		60½		55·0	0·83		202		199			
"Corrected Means."	29·908	29·919	46·2	36·1	41·0	38·4	41·4	38·9		1·94		1·77	0·83		6·5		6·4			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. ..... = 29·908

"Corrected Mean" at 20 h. 45 m. ... = 29·919

29·836 ~~29·836~~ ·077

Mean, reduced to 32°, and Sea-level, = 29·913

Highest corrected Reading at 9h. Universal Time, on the 15th ... = 30·525

Lowest corrected Reading at ~~5h. 45m.~~ 29·036 Universal Time, on the 20th ... = ~~28·964~~ 1·489

Difference, or Monthly Range, ... = ~~1·561~~

S.-R. THERMOMETERS (in shade, &c.) Highest in Month (corrected for Index Errors) on the 24th ... = 55°·5

Lowest in Month, (corrected for Index Errors), on the 4th ... = 21·0

Difference, or Monthly Range, ... = 34·5

"Corrected Mean" of all the Highest, (Col. 3), ... = 46·2

"Corrected Mean" of all the Lowest, (Col. 4), ... = 36·1

Difference, or Mean Daily Range, ... = 10·1

Calculated Mean Temperature of Month, = 41·1

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), ... = 41°·2

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), ... = 38·6

‡‡ Computed Temperature of Dew-Point, = 35·4

‡‡ Do. Elastic Force of Vapour, ... = 0·206 ~~0·240~~

‡‡ Relative Humidity (Saturation = 100), = 80 ~~72·0~~

RAIN fell on 13 Days; Amount ..... = 0·83 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	1		2	4	3		17	3	1	1·94	
21 h.	3		6	3		1	16	1	1	1·77	
Mean.	2	0	4	4	1	1	16	2	1	1·86	= 3·46 [illegible]

NOTATION USED IN GENERAL REMARKS.

a.	*denotes* aurora.		m.	*denotes* meteor.	
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Greatest Daily Range = 19.0 on the 22nd

Observations made and Return verified by _____

(Signed) James Bolam & George Redpath.

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Leith
Mar. 1889

SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of April 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✳, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✳, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33647 & 18. 9 h. Dry bulb. °	Wet bulb. °	21 h. Dry bulb. °	Wet bulb. °	Wind. 9 h. Direction	Force, 0—6.	21 h. Direction	Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	29·766	29·792	50·7	40·0	48·2	42·3	41·0	37·0	W	2·5	WNW	2·0	0·00	2 WNW	3 Cuf.	0	0		Fine; mostly sunny: li. shs. at 10h. 30m.	1
2	29·895	29·913	46·0	35·5	40·5	34·4	38·0	33·2	WNW	2 ~~2¼~~	N	2 ~~2¼~~	·00	2 N	9 Cu.	n.d.	5–8 loose Cuf.		Fine; cloudy, with short sunny intervals.	2
3	29·773	29·360	43·1	33·9	40·0	35·6	37·1	36·0	S	1·5	ESE	2 ~~2·5~~	·24	1·5 (N.?)	10 Cuf	n.d.	10 N.		O'cast; const. r. (with sl. at times) aft. 13h.; r. hl. at 21h.	3
4	29·235	29·539	40·0	35·5	39·7	38·5	39·1	38·0	ESE	2·5	ENE	~~2~~ 3	·28	2¾ ESE	10 Cu.	n.d.	10 N.		O'cast; nearly const. r. till 9h.; r. sho. aft. r. sl. at intvs. aft. 13h.	4
5	29·592	29·700	41·1	37·8*	39·7	38·8	38·0	35·4	E	2·5 ~~2¾~~	E	2¼	·12	2¾ ESE	10 Cuf.	2 Ely	9·5 Cu.		Cloudy; shs. till 10h.	5
6	29·672	29·619	42·0	37·0	40·0	37·5	39·6	38·1	E	~~1·5~~	E	2·0	·04	1·5 ESE	10 Cuf.	2 Ely	10 Cuf.		Cloudy; frequent li. shs.	6
7✳	29·616	29·632	41·5	37·2	38·9	38·0	39·1	38·1	E	2·5	E	~~2~~ 3	·10	2·5 ~~3~~ E	10 Cuf. sc.	n.d.	10 N.		Cloudy; showery.	7
8	29·546	29·559	41·6	37·4	41·2	40·2	37·9	36·1	ESE	2·0	E	~~2¼~~ 2½	·10	2¼ ESE	10 Cuf.	2¼ E	9·5 Cuf.		Cloudy; shs. till 7h. 30m.	8
9	29·583	29·602	43·0	35·3	38·6	37·0	38·9	37·0	E	2·0	E	2¼	·05	2 E	10 Cuf.	2 E	9 Cu.		Cloudy, with sunny intvs. aft. noon; r. shs. till aft. 9h. + at 18½h. and [sl. shs. at 7h. 15m. + 7h. 40m.	9
10	29·651	29·668	40·3	37·2	39·1	38·2	40·1	40·0	E	2·0	E	2·0	·08	2 E	10 Cuf.	n.d.	10 Species?		O'cast; r. till 13h., and li. shs. at intervals later.	10
11	29·641	29·676	41·2	38·0	39·7	38·8	40·9	40·0	ENE	~~3~~ 2	E	2·0	·11	2 E	10 Cuf.	2 E	10 Cuf.		Overcast; light r. chiefly.	11
12	29·817	29·941	41·1	37·9*	40·9	40·6	38·4	37·1	ENE	2·0	ENE	2 ~~2·5~~	·04	2 Ely	10 N.	2·5 E	10 Cuf.		Overcast; light drizzling r.	12
13	29·933	29·933	43·3	37·6*	40·4	38·2	39·0	37·0	NE	2·0	NNE	~~2~~ 2·5	·04	2¼ ENE	9 Cu.	2¼ NNE	10 Cu.		Cloudy; shs. at intervals after 12h. 40m.	13
14✳	29·950	29·948	47·3	36·1	39·2	35·2	41·0	38·5	NW	1 ~~N~~	Calm	0	·01	2 NE	10 Cu.	0	0		Fine; cloudy till about 13h., then sunny.	14
15	29·987	30·002	48·2	38·9	43·7	41·2	46·3	41·0	ESE	1·5	W	0·5 ~~N~~	·00	2 N	6 Cu.	2 Nly	10 Cu.		Fine; mostly sunny.	15
16	29·999	29·932	53·3	41·2	47·3	42·4	47·5	43·7	WNW	1·5	W	~~2~~ 2·5	·00	2 N	10 Cu.	n.d. ?	10 frost, 5 for Ci-st. ?		Fine; cloudy, with short sunny intervals.	16
17	29·932	30·009	61·3	45·4	53·0	49·7	46·1	43·0	W	1¾	WSW	2·5	·00	1 N	10 Cu.	0	0		Fine; cloudy till 14h., then sunny.	17
18	30·050	29·998	52·9	42·3	47·2	43·1	49·5	45·0	W	2·5	WSW	2 ~~2·5~~	·00	2 W	10 Cuf.	2¼ W	9 Cuf.		Fine; sunny after 12h. 30m.	18
19	29·976	29·923	59·0	46·9	52·0	47·0	50·8	46·9	WSW	2·5 ~~2¾~~	WSW	~~2~~ 2·5	·00	2·5 W	10 Cu.	2 Wly	3 Cuf.		Fine, cloudy; short sunny intvs. during afternoon.	19
20	29·736	29·617	56·2	44·9	50·0	45·2	49·9	45·9	W	~~2·5~~ 3	SW	2 ~~3~~	·01	2·5 W	6 Cu.	n.d. / n.d.	2 faint Ci-st. / 2 St.		Fine; sunny till about 13h.; shs. between 5h. + 6h.	20
21✳	29·376	29·402	53·5	41·0	47·8	45·7	43·0	40·0	SW ~~2·5~~ 3		WSW	~~2~~ 2·5	·24	2·5 W	10 Cor. Ci-st.	n.d.	5 St.		Heavy shs. bet. 4½h. + 6h.; day fine, mostly sunny; shs. at [19h. 20m.	21
22	29·617	29·726	52·5	41·0	47·3	42·2	42·2	37·0	WNW	1·5	W	1·0	·00	1·5 W. by N	7 Cu.	n.d.	1 (Cor.) St.		Fine; sunny at times.	22
23	29·371	29·358	51·4	39·8	46·1	42·5	44·4	41·0	S	2·5	W	0·5	·15	2 W	10 Cu.	2 W. higher layer, 1 Wly	3 Ci-st. / 2 Cu. +		Changeable; shs. at 6½h. + 7½h., + h. shs. (with hail bet. 11h. 35m. + [11h. 45m.) from 11½h. till 13h.; sunny after 14h.	23
24	29·576	29·803	44·4*	39·2	42·2	40·7	42·9	42·1	N	2 ~~2·5~~	ENE	2·5 + ~~3~~	·26	2·5 NE	10 Cu.	3 ENE	10 Sc.	Thermo. read at 9h. 30m.	Overcast; shs. at intvs. aft. 9h., + const. r. after 15h.	24
25	29·989	30·021	47·2	40·4	41·9	40·3	42·0	40·4	N	~~2~~ 2·5	E	1·0	·10	2¾ ENE (ice)	10 Cor. Ci-st.	1·5 Ely	9·5 Cu.		Cloudy, showery till 9h. 30m.; sunny after 15h.	25
26	29·912	29·776	52·2	35·9	50·6	46·8	46·9	45·0	SSE	2·0	SE / SW	~~1·5~~ 1·5	·11	2¼ SSW	4 Cu.	2·5 Wly	10 Cuf.	Thermo. read at 9h. 30m.	Fine, sunny till aft. 14h., then cloudy; li. sho. aft. 16h., and [brisk r. after 18h. 30m.	26
27	29·872	29·874	58·2	42·9	49·8	44·5	48·6	44·2	WSW	2·0	SW	1·5	·01	1·5 WSW	9 Cu.	1·5 SWly	9 Cu.		Fine; sunny at times.	27
28✳	29·738	29·568	57·2	42·1	48·8	46·1	46·1	44·0	NE	1·0	Sly	0·5	·15	2 S / 1·5 SSE	1 Ci-st. / 2 Cu.	2 S	10 Cu.		Mostly cloudy; sunny at times; dist. T. at 17h. 52m., followed [by heavy sho. till 19h. 15m.	28
29	29·720	29·842	55·9	40·0	48·1	43·0	43·9	41·0	S	2 ~~2·5~~	SE	1·5	·05	2 S / 1·5 SSW	9 Cu. / 1 Ci-st.	2 SW. 5 mod. height Ci-st.			Fine; sunny intervals; passing shs. at 16h.	29
30	29·854	29·631	49·9	37·9	49·0	45·3	43·9	43·9	ENE	2·5	ENE	2¼	·03	2·5 SE	2 Cu.	n.d.	10 Cor. Ci-st.		Fine, sunny till 13h., then cloudy; showery aft. 16h.	30
Sums.	~~29·375~~ 29·364	~~29·364~~ 29·364	~~455·5~~ 455·5	~~476·2~~ 476·2	~~439·0~~ 439·0	~~452·1~~ 452·1	~~420·6~~ 420·6			7 61·25		7 56·25	22 2·32		258		211 5			
"Corrected Means."	29·746	29·745	48·5	39·2	44·4	41·3	42·7	40·2		2·04		1·88	2·32		8·60		7·08			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16 7·8	17			

BAROMETER, "corrected Mean" at 9 h. ..... = 29·746

"Corrected Mean" at 20 h. 45 m. ... = 29·745 ~~29·668~~

Height 70 feet = .077

Mean, reduced to 32°, and Sea-level, = 29·745

Highest corrected Reading at 8h. Universal Time, on the 18th. = 30·050

Lowest corrected Reading at 5h. 45m. Universal Time, on the 4th. = 29·235

0·815

Difference, or Monthly Range, ... = ~~0·849~~

S.-R. THERMOMETERS (in shade, &c.) Highest in Month (corrected for Index Errors) on the 17th. = 61°·3

Lowest in Month, (corrected for Index Errors), on the 3rd. = 33·9

Difference, or Monthly Range, ... = 27·4

"Corrected Mean" of all the Highest, (Col. 3), ... = 48·5

"Corrected Mean" of all the Lowest, (Col. 4), ... = 39·2

Difference, or Mean Daily Range, ... = 9·3

Calculated Mean Temperature of Month, = 43·8

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), ... = 43°·5

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), ... = 40·7

‡‡ Computed Temperature of Dew-Point, = 37·4

‡‡ Do. Elastic Force of Vapour, ... = 0·228 ·260

‡‡ Relative Humidity (Saturation = 100), = 79

RAIN fell on 22 Days; Amount ..... = 2·32 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	2	2	11	0	4	1	9	1	0	2·04	
21 h.	2	0	13	1	1	3	9	0	1	1·88	
Mean.	2	1	12	1	2	2	9	1	0	1·96	= 3·84 lbs.

NOTATION USED IN GENERAL REMARKS.

a.	denotes	aurora.	m.	denotes	meteor.
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Observations made and Return verified by _____ Greatest daily range = 16°·3 on the 26th. (Signed) James Bolam & George Redpath.

Leith
April 1889

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SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of *May* 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✱, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✱, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. °	Min. Kew No. °	Hygrometer. Kew No. ..... 9 h. Dry bulb. °	Wet bulb. °	21 h. Dry bulb. °	Wet bulb. °	Wind. 9 h. Direction	Force, 0—6.	21 h. Direction	Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	29·562	29·746	55·0	*42·9	52·2	49·7	44·2	42·1	S	2·0	SE	2·0	0·44	2 S	4 cu.	2 S	5 cu.	/	O'cast, h. r. previous night; day cloudy, with sunny intervals; T at 19h. 20m.	1
2	29·722	29·799	55·2	40·8	46·2	43·5	47·3	45·1	ENE	2·0	SE	2·0	·01	2 SSE ly	1 cu. on E. hor.	?: prob. some ci-st. 2 S ly	3 St.		Fine; mostly sunny; shs. at 15h. 30m.	2
3	29·822	29·856	55·9	40·8	50·1	47·2	52·8	49·0	ESE	1·5	S	~~2~~ 2¼	·03	2 S	10 cu.	2 S	10 cu.		Cloudy; a few showers.	3
4	29·937	29·954	67·3	*46·9	59·7	52·9	47·8	46·5	E	1·5	NE	0·5	·00	1·5 S / 0	7 ci-cu. / 0	1·5 SWly	10 St.		Fine; cloudy, with short intvs. of bright sunshine.	4
5 ✱	29·967	29·954	*54·0	*44·0	45·9	45·9	44·0	44·0	E	~~2~~ 2·5	E	2 or ~~1~~	·00	n. d.	10 thick St.	n. d.	10 thick St.		Overcast; thick h. at times.	5
6	29·989	29·960	50·5	43·0	45·0	44·8	46·0	45·4	E	1·0	ENE	~~1~~ 2¼	·01	n. d.	10 H.	0	0	Thermo. read at 21h. 35m.	Cloudy (with thick h. & drizz. at times) till 13h., then sunny.	6
7	29·857	29·773	49·0	43·9	47·3	46·8	46·9	46·1	ENE	1¾ or ~~2~~	NE	1¾ or ~~1~~	·00	n. d.	10 H.	2 NEly.?	10 St.	/	Cloudy; thick h. at times; short sunny intvs. all noon; T & L between 21h. & 22h., & N. after 21½h.	7
8	29·735	29·785	55·0	44·1	45·1	45·0	48·9	46·1	ENE	1·0	ESE	1·0	·09	1·5 E	10 H. massed.	1·5 SSly / 0	10 ci-st / 0		Cloudy; brisk shs. till 5½h.; sunny aft. 14½h. – So. ha. at 15h. 45m., & faint lu. ha. at 21½h.	8
9	29·814	29·812	62·1	46·5	53·0	50·4	51·8	48·9	ENE	1·5	E	1·5	·02	1·5 S	10 Sor-ci-st.	1·5 SSly	10 Sor-ci-st.		Cloudy; slight sun at times; li. shs. till about 11h.	9
10	29·721	29·848	59·0	44·8	48·7	48·0	49·4	48·8	E	2·0	N. var.	0·25	·08	1·5 SSE	1 cu.	1·5 SWly	10 N.		Cloudy, with sunny intvs. forenoon; frequent li. shs. during day, and const. r. at 21h.	10
11	29·863	29·934	50·9	45·9	48·2	47·1	47·3	46·9	E	2·0	E	~~1~~ 2·5	·11	n. d.	10 prob. cu.	2·5 E (ac.)	10 St.		Cloudy, sunny at times after 13h.	11
12 ✱	29·956	29·988	53·6	46·2	52·0	49·7	48·0	47·0	E	2·0	E	2·0	·00	1·5 E / 2¼ E	2 ci-cu. / 4 cu.	n. d. / 0	7 ci-st. / 0		Fine; mostly sunny.	12
13	30·020	29·964	55·1	44·5	47·6	46·0	46·9	45·0	ESE	2·5	E	2 or ~~1½~~	·00	3 E	10 cu.	2 NNE / 2¼ E	10 {layer ci-cu. / cu. f. higher}		Fine; cloudy till about 11h., then sunny.	13
14	29·879	29·837	49·8	43·1	45·9	43·2	45·9	45·2	E	1·5	NE	2·0	·08	n. d.	10 cu.	1·5 SWly	10 cu.-N.	/	Cloudy; shs. aft. 16¾h., and T & L. at 19h. 10m.	14
15	29·830	29·918	49·1	44·0	47·3	45·9	46·9	45·8	E	1·5	NE to E	1·0	·23	2 S	10 cu.	2 S ly	10 cu.		Cloudy; shs. till 9h., then fine.	15
16	30·019	30·055	50·8	45·8	46·8	46·2	46·3	45·9	ENE	1·5	ENE	2·0	·00	n. d.	10 H.	2 ENE	10 St.		Cloudy; hazy; sli. drizzle at 8h.	16
17	30·074	29·993	52·4	44·7	46·0	45·8	49·9	48·9	ENE	~~1~~ 2	ENE	~~1~~ 2¼	·04	n. d.	10 Species?	2·5 ENE	10 N.		Morning, thick h.; day cloudy till noon, with shs. between 10h. & 11h.; showery aft. 12½h.; O'cast, r. after 20h.	17
18	29·907	29·912	58·0	45·9	49·2	47·9	50·8	49·7	NW	1·0	Calm	0	·04	2¼ WSW / 2 NW 9·5	{ci-cu. med. / cu. f.}	n. d.	7 faint St. & H.		Cloudy till 15h., then sunny.	18
19 ✱	29·951	29·988	*50·8	44·0	46·6	46·3	48·8	48·2	E	1·0	SE	0·5	·02	n. d.	10 H.	0·5 SWly	10 cu. f.		Cloudy; thick h. at times; shs. between 13h. & 14h.	19
20	30·065	30·095	57·0	47·8	50·7	50·1	52·8	50·0	E	1·5	NW	0·5	·00	n. d.	10 F.	n. d.	3 faint St.		Morning, thick F.; day fine, mostly sunny.	20
21	30·113	30·033	60·7	47·3	56·7	52·8	53·8	51·2	ENE	1·0	SE	1·0	·00	1 SWly	patch. cu. f.	n. d.	10 faint St.		Fine, sunny.	21
22	29·959	29·874	72·1	50·6	56·6	52·9	60·4	53·3	SE	1·0	SW	1·5 or ~~2~~	·00	1·5 S	1 Sor-ci-cu.	2 S W / 0	4 ci-st. / 0		Fine; sunny at times.	22
23	29·825	29·710	67·3	50·9	59·7	55·4	53·8	51·2	S. var.	0·5	Variable	0·5	·00	2 S	2 cu.	2 SSW	2 cu.		Fine; mostly sunny.	23
24	29·591	29·577	69·2	49·7	62·0	55·0	53·8	50·9	S	2 or ~~1~~	W	2·0	·00	2 S / 2 SSW	1 ci-cu. / 4 ci-cu.	2 S / 1·5 S	1 cu. / 2 cirrus.		Fine; mostly cloudy during afternoon; shs. at 20¾h.	24
25	29·583	29·638	64·8	47·9	53·8	47·2	53·8	47·9	WNW	2¼	W	~~1~~ 2	·00	0	0	Sor. cu. in N. sky.		Fine, clear, sunny.	25
26 ✱	29·738	29·840	58·0	43·9	54·2	51·2	51·5	49·0	E	1·5	E	2·0	·00	0·5 SSE / 0	2 ci-cu. / 0	n. d.: 1 cu. above N. hor.		Fine, sunny; very clear.	26
27	29·845	29·719	57·8	44·0	52·8	48·9	50·9	47·9	ENE	2·0	E	2 or ~~1½~~	·00	2 SSW	3 cu. f.	2 S : 1	0 Sor. ci-st.		Fine, clear, sunny; evening cloudy.	27
28	29·538	29·477	57·0	47·7	50·2	49·7	53·8	51·0	E	1·5	SE	2·0	·57	2 E	10 N.	2 S : 8	Sor. ci-st.		O'cast, const. r. (heavy at times) till 14h.; sunny intvs. aft. 16h.	28
29	29·479	29·530	61·0	49·2	58·5	53·1	51·2	46·6	S	2·0	SSW	2·0	·03	1·5 S	8 cu.	Large cu. above N. horizon.		/	Cloudy, with sunny intvs.; passing shs. till noon; distant T. at 15h. 30m.	29
30	29·598	29·652	63·1	41·9	54·0	50·9	49·8	47·9	SSW	1·5	SE	0·5	·10	2 SW	9 cu.	1·5 SW	9 cu. chiefly.		Changeable; a few brisk r. shs., with large hail at 11h. 30m.	30
31	29·568	29·629	61·8	47·0	54·2	51·7	52·1	49·1	S	1·5	S	2¼	·14	2 SW	10 cu.	?	1 St.		Mostly fine; some heavy showers.	31
Sums.	~~924~~ 527	~~924~~ 850	~~1423~~ 1383	~~1429~~ 1097	~~1586~~ 1562	~~1511~~ 1512	~~1547~~ 1517	~~1480~~ 1406			50·8	48·0	2·04		270		224 ~~186~~			
"Corrected Means."	29·823	29·834	57·5	45·5	51·2	48·7	49·9	47·8			1·61	1·55	2·04	17 days		7·1 / 7·2	7·2			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. ..... = 29·823

"Corrected Mean" at 20 h. 45 m. .... = 29·834

Height 70 feet = ~~29·751~~ 7

Mean, reduced to 32°, and Sea-level, = 29·828

Highest corrected Reading at ~~8h.~~ Universal Time, on the 21st = 30·113

Lowest corrected Reading at ~~17h.~~ Universal Time, on the 28th = 29·477

Difference, or Monthly Range, ... = 0·636

S.-R. THERMOMETERS (in shade, &c.) Highest in Month (corrected for Index Errors) on the 22nd = 72°·1

Lowest in Month, (corrected for Index Errors), on the 2nd & 3rd = 40·8

Difference, or Monthly Range, ... = 31·3

"Corrected Mean" of all the Highest, (Col. 3), ... = 57·5

"Corrected Mean" of all the Lowest, (Col. 4), ... = 45·5

Difference, or Mean Daily Range, ... = 12·0

Calculated Mean Temperature of Month, = 51·5

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), ... = 50°·5

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), ... = 48·2

‡‡ Computed Temperature of Dew-Point, = ~~46·0~~ 45·8

‡‡ Do. Elastic Force of Vapour, ... = ~~0·311~~ 0·308

‡‡ Relative Humidity (Saturation = 100), = ~~84~~ 83·51

RAIN fell on 17 Days; Amount ..... = 2·04 Inches.

WIND. ~~Direction~~	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
	SUMMARY.										
9 h.	0	0	2	2	1	6	0	1	1	0	1·61	
21 h.	1	4	1	1	6	3	1	2	1	2	1·55	
Mean.	1	2	1	6	3	4	1	2	1	1	1·58	= 2·50 ~~2·51~~

NOTATION USED IN GENERAL REMARKS.

a.	*denotes* aurora.		m.	*denotes* meteor.	
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Observations made and Return verified by ~~Greatest daily range = 21°·5 on the 22nd~~

(Signed) James Bolam & George Redpath.

Letter June 1879

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SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of June 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✱, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✱, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33,647 1.8. 9 h. Dry bulb. °	9 h. Wet bulb. °	21 h. Dry bulb. °	21 h. Wet bulb. °	Wind. 9 h. Direction	9 h. Force, 0—6.	21 h. Direction	21 h. Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	9 h. Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	21 h. Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	29·779	29·826	65·1	51·4	57·6	51·9	57·4	52·1	S	2¼	S	1·5	0·01	2 S: Mod. ht. 6 ci-cu. Amt ? 2¼ SSW	9 cu.	2 S	3 cu. + St.		Fine; sunny at times.	1
2 ✱	29·817	29·719	61·2*	50·0*	54·2	52·7	50·6	50·1	ESE	1·0	E. var.	0·25	·38	0·5 S	1 cu.	2 SSE: 10, Species ?	Thermos. read at 9h. 30m.	[from 15½h. till 18½h.; severe T.S. bet. 18.35 & 19.50, with h. r. aft. 19.10. Variable; T.S. bet. 10¾h. & 12¾h. accomp. by h. r. at times; thick f. [Sunny after 14h.	2
3	29·732	29·917	68·3	49·9	56·5	55·5	55·3	51·0	W	1·5	SW	1·0	·15	2 S. by W	10 cu. + St.	2 Sly	1 (low) cu.		Thick f. till aft. 6h.; cloudy, with brisk sho. till noon; fine	3
4	30·114	30·372	69·9	51·8	61·3	52·9	57·0	52·9	SW	2¼	Variable	0·25	·00	2 S SW	1 cu.	1 W by	1 (low) cu.		Fine, sunny.	4
5	30·495	30·441	63·3	46·9	58·3	52·4	56·1	52·6	SSW	1·0	E	1·5	·00	1·5 SSW	4 cu. + low ci-cu.	1·5 SSW	8 low ci-cu.		Fine, sunny; rather hazy.	5
6	30·323	30·131	57·3	46·7	56·7	52·9	52·9	52·9	ENE	1·0	Calm	0	·05	1·5 SSE	8 ci-cu.	n. d.	10 N.	[severe T.S. between 21h. and 22h.	Fine; mostly cloudy; h. s. at 19¾h., followed by T. & L. aft. 20h.;	6
7	30·198	30·154	59·0	51·1*	53·0	51·3	51·6	47·8	SE	2·0	E	1·5	·65	2 ESE	10 cu.	1·5 SE	8 Small cu.	[Sunny after 10h.	Sharp T.S. accomp. by very h. r. at 2h.; dull till 8½h., and	7
8	29·979	29·827	60·5	43·5	56·6	52·0	49·7	48·8	W	0·5	W NW	1·0	·12	1¾ WSW	8 cu.	1·5 WSW	10 N		Cloudy; sh. at 15¾h., and const. r. after 17¾h.	8
9 ✱	29·801	29·892	53·9	48·1	48·8	47·5	50·8	47·8	E	2·0	ENE	2·5	·06	2 E	10 cu.	2¼ ENE	9 cu.		Cloudy; sho. till 9½h. and at 12½h.; sunny intervals aft. 16h.	9
10	29·990	30·006	57·0	45·6	53·3	47·0	48·8	45·1	ENE	2·0	E	1·5	·00	2 ENE	1·5 cu.	1 NE	3 ci-cu.		Fine, sunny; very clear.	10
11	29·948	29·837	63·0	40·1	54·8	50·0	56·1	49·9	NE	1·0	SW	1·0	·00	0	0	1·5: 1 ci-st. at times N.S. 0	0		Fine; mostly sunny.	11
12	29·848	29·882	65·5	50·4	58·9	53·0	56·8	53·0	W	1·5	W	1·0	·02	2 WSW	9 cu.	1¾ WSW	3 cu.		Fine; cloudy, with short sunny intervals.	12
13	29·836	29·787	70·6	52·6	62·5	57·9	56·8	53·0	S	1·5	SW	2·0	·00	2 S W	9 cu.	2 SW	1 cu.		Fine; mostly sunny during afternoon.	13
14	29·839	29·861	65·1	54·9	61·5	57·1	55·7	50·6	SW	1·5	W	2·0	·00	2 SW	9·5 cu.	2 SW	10 St.		Cloudy; fine.	14
15	29·947	30·005	66·6	49·0	58·7	53·4	57·0	52·9	W	2·0	W	2·25	·00	2 W. by S	9 cu.	2 W	2 cu.		Fine; cloudy till 12¾h., then mostly sunny.	15
16 ✱	30·088	30·127	68·7	50·8	59·0	52·9	58·7	54·0	W	2·25	W	2¼	·00	2¼ W NW	8 cu.	0	0		Fine, sunny.	16
17	30·200	30·227	69·8	48·9	59·7	54·5	56·3	54·2	W NW	1·5	Variable	0·25	·00	0	0	0	0		Cloudless; sunny; rather hazy.	17
18	30·276	30·238	61·0	50·4	56·8	54·9	55·8	53·9	ENE	1·0	Variable	0·5	·00	n. d.	10 N.	0	0		Morning, thick f.; day fine; sunny after 13h. 30m.	18
19	30·243	30·239	58·9	50·6	55·3	53·4	52·8	51·6	ENE	1·5	ENE	2·0	·00	1·5 ESE	10 cu.	2·5 ENE	10 cu.		Fine; cloudy till about 14h., then sunny.	19
20	30·228	30·193	57·9	51·6	54·8	52·0	51·9	50·9	E	2¼	ENE	2·0	·00	2·5 ESE	10 cu.	2·5 E (SSE ?)	10 cu. 2 ci-st.		Fine; cloudy till noon, then sunny.	20
21	30·187	30·113	57·2	49·4	52·3	51·1	53·1	51·9	E	1·5	E	1·5	·00	n. d.: 10, Species ?		0	0		Fine; mostly sunny.	21
22	30·118	30·198	69·1	50·7	65·5	60·1	55·6	52·9	W	1·0	E	2·0	·00	0	0	2¼ E	10 St.		Thick h. early morning; day fine, sunny.	22
23 ✱	30·178	30·126	57·1	51·1*	53·1	51·0	51·4	48·6	E	2·0	E	1·5	·00	2 E	10 cu.	0	0		Fine; sunny after 15h.	23
24	30·113	30·103	57·9	48·4	53·3	51·4	53·1	51·9	NE	1·0	ENE	2·0	·00	1·5 E by	10 cu.	n. d.	2 (low) St.		Fine; cloudy till 13h. 30m., then sunny.	24
25	30·146	30·098	60·0	51·9	54·4	52·7	55·0	53·9	E	1·5	NE. var.	0·5	·00	2 N	10 cu.	n. d.	2 (low) St.		Fine; mostly sunny.	25
26	30·098	30·007	78·4	51·0	63·7	59·2	63·7	57·9	E. var.	0·5	SW	2·0	·00	0	0	0	0		Fine; morning h. d.; day sunny, rather hazy.	26
27	30·050	30·052	69·1	57·5	60·9	56·2	61·0	54·0	W	1·0	W	0·5	·00	2 WSW	10 cu.	1·5 S: 5 cu. patches.			Fine; cloudy till noon, then sunny.	27
28	30·063	30·106	71·2	53·3	61·3	55·9	59·8	53·0	NW	0·5	W	1·5	·00	2 SSW: 7 ci-st. + 6 ci. 2 WSW	1 cu.	n. d. 1·5 SW	3 faint ci-st. 5 cu.		Fine; mostly sunny. – So. ha. at 9h.	28
29	30·198	30·193	68·6	50·8	60·9	55·1	58·7	53·1	W	1·0	W	0·5	·00	1·5 S W by 2 S W	4 ci-cu. 2 cu.	1·5 WSW 2 W N W by	10 cu. 1 ci-cu.		Fine, cloudy; sunny at times during afternoon.	29
30 ✱	30·173	30·320	65·9	57·5	60·7	56·0	57·5	52·2	W	2·25	W	2·0	·00	2·5 W	10 cu.	2 W: 6 ci-cu. + St.			Fine; cloudy till 15h. 15m., then sunny.	30
Sums.	13 ~~402·005~~	10 ~~401·997~~	17 ~~647·1~~	11 ~~505·9~~	14 ~~544·4~~	11 ~~601·9~~	15 ~~657·0~~	11 ~~555·5~~		44·25 ~~135~~		40·5	1·44		210		139			
"Corrected Means."	2 30·067	1 30·067	11 63·9	0 50·2	22 57·5	10 53·4	15 55·2	5 51·8		1·47		1·35	1·44	8 days.	7·0	5·8	4·6			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. = 30·067

"Corrected Mean" at 20 h. 45 m. = 30·067 ~~29·990~~ ·077

Height 20 feet =

Mean, reduced to 32°, and Sea-level, = 30·067

Highest corrected Reading at ~~9h.~~ 5h. Universal Time, on the 5th = 30·495

Lowest corrected Reading at ~~30th.~~ 2nd Universal Time, on the 2nd = 29·~~673~~ 719

Difference, or Monthly Range, = 0·~~776~~

S.-R. THERMOMETERS (in shade, &c.)

Highest in Month (corrected for Index Errors) on the 26th = 78°·4

Lowest in Month, (corrected for Index Errors), on the 11th = 40·1

Difference, or Monthly Range, = 38·3

"Corrected Mean" of all the Highest, (Col. 3), = 63·9

"Corrected Mean" of all the Lowest, (Col. 4), = 50·2

Difference, or Mean Daily Range, = 13·7

Calculated Mean Temperature of Month, = 57·0

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), = 56°·4

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), = 52·6

‡‡ Computed Temperature of Dew-Point, = 49·1

‡‡ Do. Elastic Force of Vapour, = 0·350 3·94

‡‡ Relative Humidity (Saturation = 100), = 77

RAIN fell on 8 Days; Amount = 1·44 Inches.

WIND. Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	3	2	1	1	3	2	4	1	0	0	1·47
21 h.	3	1	1	0	1	4	9	0	0	4	1·35
Mean.	3	1	1	1	2	3	10	0	0	2	1·41 = 1·99 ~~1·44~~

NOTATION USED IN GENERAL REMARKS.

a.	*denotes* aurora.		m.	*denotes* meteor.	
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	·5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Observations made and Return verified by Greatest daily range = 27°·4 on the 26th. (Signed) James Bolam & George Redpath. J. G.

Leith
June 1887

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SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of July 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✳, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✳, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22341 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33,647 & 8. 9 h. Dry bulb. °	9 h. Wet bulb. °	21 h. Dry bulb. °	21 h. Wet bulb. °	Wind. 9 h. Direction	9 h. Force, 0—6.	21 h. Direction	21 h. Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	9 h. Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	21 h. Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	30·434	30·437	71·2	49·6	58·3	51·4	57·0	52·6	NW	1·0	N. var.	0·5	0·00	2 WNW	3 cu.	2 NW	8 cu. & St		Fine; sunny till about 15h., then cloudy.	1
2	30·445	30·431	62·3	55·1 ✳	58·9	56·1	55·4	52·6	E	1·5	E	1·5	·00	1 ENE	10 cu.	2 NNE	8 cu.		Fine; sunny after 12h. 30 m.	2
3	30·411	30·311	61·2	51·8	54·8	50·9	54·8	53·2	ENE	2·0	ENE	~~1~~ & 2	·00	2¼ ESE	9 cu.	2¼ E	9·5 cu.		Fine; sunny after 10h.	3
4	30·302	30·284	59·4	53·0	54·6	53·9	54·8	53·8	ENE	2·0	ENE	2·0	·02	2 E	10 cuf.	2 E	10 cuf.	First rain here for 22 days.	Cloudy till about 15h., then sunny; drizz. sho. at intvs. [between 3 & 9½h.	4
5	30·302	30·217	60·3	53·5	57·2	52·9	55·8	54·0	ENE	2·0	E	1¼	·00	2 ESE	9 cu.	0	0		Fine; cloudy till 15h., then sunny.	5
6	29·970	29·766	72·5	48·4	67·8	60·1	56·6	52·9	W	1·5 & ~~2¼~~	W	2·5	·00	0	0	2¼ WNW (ac)	10 Sor ci-st.		Fine; sunny at times; evening v. east; sho. aft. 21¼h.	6
7 ✳	29·686	29·670	62·0	50·5	53·8	47·1	51·9	47·5	NW	2·5	W	1·5	·30	2 N. by W	9 cu.	1·5 NNW	8 Sor ci-st. & St.	1	Var.; sunny intvs.; h. T. & r. at 16h., with T & large hl. at 16¼h. [passing sho. till 18h. 45 m.	7
8	29·680	29·755	62·3	44·2	55·2	47·9	54·8	50·0	W	~~2·5~~ & 3	WSW	2·5	·00	2 NW	1 cu.	1 W NWly	10 cu.		Fine; sunny till about 13½h., then mostly cloudy.	8
9	29·847	29·806	61·3	49·8	55·4	51·2	55·8	54·9	NWly	1·0	ENE	2·5	·02	2 E	7 cu.	2·5 ESE	10 N.	Thermos. read at 8h. 35 m.	Fine; sunny at times; cloudy aft. 16h. & very li. sho. abt. [18h.; li. r. after 19½h.	9
10	29·685	29·720	57·0	51·8 ✳	56·9	56·5	52·3	51·1	E	2·5	ENE	~~1~~ & 3	·84	2·5 E	10 cu.	2¼ & 3 ENE	10 N. & cu.		O'east; h. r. till 8½h. & drizz. sho. at intvs. dur. day; const. r. [after 17½h.	10
11	29·857	30·020	53·2	48·8 ✳	51·9	51·1	48·8	47·9	ENE	~~2·5~~ & 3	E	2·0	·47	2 ENE	10 N.	2¼ E	10 N.		Overcast; constant rain.	11
12	30·085	30·060	57·4	47·8	51·8	49·7	55·0	53·1	E	1·5	SE	0·5	·19	1·5 E	10 cuf.	1 W	10 St.		R. dur. prev. night; day cloudy, but clear; sunny between [13¾h. and 17h.	12
13	30·006	29·881	64·0	50·6	57·5	55·7	59·7	57·2	ENE	1 & ~~1·5~~	S	0·5	·00	?	1 ci-cu. (Lor)	1 WSW	10 cu.		Fine; sunny till 14½h., then cloudy; ci. sh. at 15½h.	13
14 ✳	29·843	29·783	63·0	49·9	55·8	49·9	53·4	49·9	WNW	2·0	WSW	1·5 & ~~2~~	·00	1 W: 4 ci-st. & ci. 2 W	3 cu.	? Some ci-st. Lor in Wly. 2 W	1 St.		Fine; mostly sunny.	14
15	29·687	29·662	61·4	49·3	55·9	51·1	52·8	49·9	W	1·5	WSW	~~1·5~~ & 2	·12	2¼ W	g heavy cu.	1 Wly: 7 Shetly ci-st. ? 1 Large cu. (Lor)			Var.; sunny intvs.; h. sho. at 9.40, 10.40, & 14½h.; T & L. [between 14h. & 14h. 35 m.	15
16	29·742	29·793	58·1	47·8	55·9	51·0	54·8	52·1	NE	1·0	S. var.	0·25	·01	1·5 NE	9 cu.	0·5 N.	8 cu.		Fine, except sho. bet. 10h. & 11h.; sunny aft. 15h.	16
17	29·832	29·907	60·0	49·8	55·1	51·9	50·1	48·7	NNW	~~1·5~~ & 2	ESE	1·0	·23	2·5 NNE	10 cu.	1·5 N.	5 cu. & St.		Cloudy; sho.; const. r. bet. 5½h. & 7½h., & from 10.20 till 12¾h.	17
18	29·907	29·847	59·5	45·8	52·5	47·5	54·1	49·8	NNW	1 & ~~1·5~~	W	2 & ~~2¼~~	·00	2 NW	10 cu.	1 W: 9·5 cu. & ci-cu.			Fine; cloudy, with short intvs. of sunshine.	18
19	29·789	29·762	59·0	50·3	54·0	50·2	53·8	49·9	W	2·0	WSW	2·0	·00	2 W	10 cu.	2 W	10 cu.		Cloudy; very li. sho. at 9h. and 12½h.	19
20	29·701	29·556	56·9	50·6	52·9	50·9	53·8	52·9	SSE	0·75	ENE	~~1~~ & 2·5	·13	2 SW	10 cu.	3 SE (ac cu)	10 N.		Cloudy; rain after 14h. 15 m.	20
21 ✳	29·448	29·520	64·1	51·9	53·5	52·6	56·1	54·9	WSW	1·0	NW	0·25	·31	1·5 W	10 cuf.	2 NNW	10 cuf. chiefly.		O'east; r. till 7h.; day mostly cloudy, with sho. at intvs. aft. [15h. 20 m., but chiefly at 19h.	21
22	29·647	29·672	64·2	47·3	57·9	52·1	54·8	51·2	W	2·5	W	2 & ~~2¼~~	·02	2¼ W	4 cu.	2 W	8 cu.		Fine; mostly sunny; sli. sho. at 18h.	22
23	29·700	29·743	61·0	48·1	54·6	51·4	53·8	51·2	NE	1·0	SE	0·25	·00	1 W	9 cu.	0	0		Fine; sunny dur. afternoon; passing sho. abt. 13h.	23
24	29·680	29·506	65·9	45·8	59·7	55·1	54·8	52·9	SE	1·0	ESE	2·0	·03	1¾ NW 2¾ SSW	7 ci-cu & ci-st. 2 cu.	2 SSW & 3 SSE	10 N. & cu.		Cloudy; sunny intvs. dur. forenoon; sho. aft. 16h. [So. hpr. at noon. Faint	24
25	29·357	29·613	57·0	53·0	54·3	53·7	54·6	51·0	NW	1·0	NNW	~~1~~ & 1·5	·73	1·5 NE	10 N.	?	2 Sor ci-st.		O'east; const. r. (heavy at times) till 14½h., then fine.	25
26	29·691	29·808	65·0	51·3	60·3	53·2	59·8	53·9	NW	2 & ~~2·5~~	WNW	2·0	·02	1 N: 7 Sor ci-cuf. 2 N: 2 ci-cu.		2 N 2 N: 2 ci-cu. & ?	5 cu. 5 ci-st.		Fine; mostly sunny dur. afternoon; brisk sh. at 5¾h.	26
27	29·916	29·960	71·2	50·8	58·7	51·9	56·8	54·0	NW	2·0	NNW	0·5	·00	0	0	0	0	Thermos. read at 8h. & 21h. 40 m.	Fine, sunny.	27
28 ✳	29·956	29·995	63·1	51·7	56·6	52·5	58·7	55·6	W	2·0	W	1·5	·00	2 W NW	10 cu.	1·5 Wly	10 cu.		Fine, cloudy; short sunny intvs. occasionally.	28
29	30·068	30·103	71·2	56·1	59·0	55·9	61·9	57·8	WSW	2·0	W	1 & ~~1·5~~	·00	2 NW: 10 2 West 1 W NW	Sor ci-cu 6 cu. 4 ci-st	0·5 SSE ?	5 cu. 2 (Lor) ci-st.	Thermos. read at 8h.	Fine; mostly sunny dur. afternoon; li. sho. bet. 8h. & 9h.	29
30	30·142	30·093	67·2	55·0	61·2	57·6	58·9	57·2	W NW	1·0	E	0·5	·00	0	0	0	0	Do. do. do.	Fine; morning h. d.; day mostly sunny; So. ha. visib. at times.	30
31	30·059	29·974	72·1	55·7	58·7	56·9	59·7	58·0	E. var.	0·5	E	0·25	·00	1 WSW: 7 (med. height) ci-cu.		1·5: 9 St. & faint ci-cu.		Do. do. do.	Fine; rather hazy; mostly cloudy during afternoon.	31
Sums.	926·875 (17, 14, 13)	926·655 (18, 14, 20)	1944·0 (12, 7)	1565·1 (15, 16)	1750·7 (17, 17)	1629·9 (11, 15)	1715·4 (16, 19)	1631·7 (15, 15)		50·75		45·16	3·44		216		202			
"Corrected Means."	29·899	29·892	62·7	50·5	56·5	52·6	55·3	52·6		1·31		1·46	~~3·44~~		7·0		6·5			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. = 29·899

"Corrected Mean" at 20 h. 45 m. = 29·892

29·818 ·077

Mean, reduced to 32°, and Sea-level, = 29·895

Highest corrected Reading at ~~9 h.~~ Universal Time, on the 2nd = 30·445

Lowest corrected Reading at 9h. Universal Time, on the 25th = 29·357

Difference, or Monthly Range, = 1·088

S.-R. THERMOMETERS (in shade, &c.)

Highest in Month (corrected for Index Errors) on Thu. 6th = 72°·5

Lowest in Month, (corrected for Index Errors), on the 8th = 44·2

Difference, or Monthly Range, = 28·3

"Corrected Mean" of all the Highest, (Col. 3), = 62·7

"Corrected Mean" of all the Lowest, (Col. 4), = 50·5

Difference, or Mean Daily Range, = 12·2

Calculated Mean Temperature of Month, = 56·6

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), = 55°·9

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), = 52·6

‡‡ Computed Temperature of Dew-Point, = 49·5

‡‡ Do. Elastic Force of Vapour, = 0·355 3.99

‡‡ Relative Humidity (Saturation = 100), = 80.

RAIN fell on 15 Days; Amount = 3·44 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	3	2	9	1	1		10	5		1.31	
21 h.	3		12	2	2		11	1		1.46	
Mean.	3	1	10	2	1	0	11	3	0	1.38	= 1.90 lb

NOTATION USED IN GENERAL REMARKS.

a.	*denotes* aurora.		m.	*denotes* meteor.	
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Observations made and Return verified by _____

Greatest Daily Range = 24°·1

(Signed) James Bolam & George Redpath.

Leith
July 1809

SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of *August* 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✱, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✱, with a Fortin Standard.*

Days of Month.	BAROMETER, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	SELF-REGISTERING THERMOMETERS, In Shade 4 feet above Grass. Max. Kew No. 22341 °	Min. Kew No. 22718 °	HYGROMETER. Kew No. 33,647 & 8. 8 h. Dry bulb. °	Wet bulb. °	21 h. Dry bulb. °	Wet bulb. °	WIND. 8 h. Direction	Force, 0—6.	21 h. Direction	Force, 0—6.	RAIN. Amount in inches.	CLOUDS. 8 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	SPECIAL REMARKS.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	29·896	29·809	72·2	57·8	65·7	60·0	61·0	55·9	SW	1·5	SW	1·5	0·00	1·5 Westerly; 2 SW	(4?) 6 ci-st; 6 ci-cu.	0	0	1·5 SWly	10 Some Ci-st.	Fine; mostly sunny. – So. ha. at 8h.	1
2	29·736	29·724	68·1	56·4	61·0	56·1	59·4	56·9	WSW	2·0	SW	✱5+2	·03	1·5 W; 2 W	4 Med. 6 ci-cu.; 1 6 cu.	1·5 Wly.	3 6 ci-cu. + 2 WSW 7 6 cu.			Cloudy; sunny at times; brisk sh. at 13h. 40m. + li. sho. [at mkts. later.	2
3	29·571	29·647	60·7	✱55·8	56·4	55·8	58·2	56·9	E	1·5	WNW	2·0	·74	2¼ SSE	10 N.	2 NW	10 N.			O'cast; nearly const. r. till 13h., and after 20h. 30m.	3
4 ✱	29·833	29·819	68·4	52·3	58·8	54·6	58·2	54·4	W	2¼	W	1·0	·18	2 W	6 6 cu.	2 W	10 6 cu. + St.			R. during previous night; day fine, mostly sunny.	4
5	29·634	29·472	✱58·2	52·1	53·8	52·4	53·8	52·5	E	1·5	WSW	2·0	·66	2 S	10 Some Ci-st.	1·5 W	9 6 cu. + Some Ci-st.			Thick overcast sky; rain chiefly.	5
6	29·454	29·634	59·7	51·8	55·1	53·7	55·8	53·8	E	0·25	WNW	1·0	·74	0·5 E	9·5 6 cu.	2 N	9 Some Ci-cu. + St.			Cloudy; heavy sho. early morning, and dur. afternoon.	6
7	29·837	29·974	65·8	52·9	57·3	53·7	56·8	54·9	W	2·0	E	1·0	·00	1¾ NNW	9 Some Ci-cu. + 6 cu.	1 Wly	10 6 cu.			Fine; sunny at times; sli. sho. aft. 17½h.; [and T + L at 22h. dist. T. bet. 16h. + 18h.	7
8	30·014	29·914	61·0	52·3	55·2	53·1	55·1	53·0	W	1·0	W	0·5	·05	1 W	10 6 cu.	1 W	10 6 cu.			Cloudy; sho. at mkts. aft. 13½h., and T. at 16h.	8
9	29·744	29·679	63·4	52·7	54·0	53·0	58·4	55·7	SE	1·5	W	1-✱2	·43	2 SSW	10 Some Ci-st.	1·5 Wly; 1	6 cu. + Some Ci-st.			Cloudy; heavy r. bet. 5h. + 7h. 50m., + T. accom. by very heavy [r. at 13h. 40m.; fine after 15½h.	9
10	29·613	29·571	61·9	51·1	53·2	51·7	53·8	52·8	W	1·5	E	0·25	·13	1 W	10 N.	0·5 Ely;	9·5 Some Ci-cu.			Changeable; const. r. bet. 7h. 50m. + 10h., + sho. at mkts. aft. 14½h.; [T. at 13h. 57m.	10
11 ✱	29·592	29·741	56·3	52·4	55·8	54·5	54·8	51·1	NE	✱2	NE	2+✱2	·72	2 6+2 5 NE	9 6 cu. + snow	2 ENE	9 6 cu.			[sho. at 6h. 20m. + 9h. 8m.; day cloudy but clear; sho. aft. 16h. 20m. Remarkably heavy r. at 5h. 18m., followed by T + L. at 5h. 22m., heavy	11
12	29·833	29·874	61·8	51·8	54·4	48·8	56·8	52·8	NNW	2·0	W	2·0	·00	1·5 N	10 6 cu.	1·5 Nly	10 6 cu.			Fine, cloudy; short sunny intervals; very clear.	12
13	29·919	29·925	64·9	51·8	55·9	52·4	55·5	50·7	W	2·0	W	✱2	·00	1·5 NNW; 2 N W	3 6 ci-cu.; 5 6 cu.	1·5 WNW	9·5 6 cu.			Fine, cloudy; sunny intvs. during afternoon	13
14	29·727	29·645	60·5	51·9	54·6	52·2	57·7	56·2	SE var.	0·5	Variable	0·5	·09	1·5 W	10 Some Ci-st.	n.d.:	10 (frost) 6 cu.			Overcast; li. const. r. between 6h. 30m. and 12h.	14
15	29·674	29·734	66·0	54·7	59·2	56·4	56·1	52·0	WSW	2+✱2	W	2·5	·00	2¼ WSW; 2 W	10 6 cu. chiefly; 8 6 ci-cu.	n.d.:	patches (frost) 6 cu.			Fine; cloudy till about 15h., then sunny; a few very [slight sho.	15
16	29·834	29·490	64·2	52·3	57·9	53·9	61·7	59·0	W	2·0	SW	2-✱2	·04	0	0	3 SW	6 cu.; 10 prob. Some Ci-st.			Fine, cloudy; sho. at 17h. 15m., and after 20h.	16
17	29·491	29·642	62·9	✱54·2	57·9	53·4	54·7	51·2	W	✱3+✱3	WSW	2+✱2	·04	2¼ W	8 6 cu.	2 WSW	2 St.			Squally, with sho. till aft. 6h.; day mostly sunny; heavy [passing clouds at times.	17
18 ✱	29·685	29·785	62·9	52·7	58·8	53·9	55·4	51·9	WSW	✱3+✱3	WSW	2+✱2	·00	2 W	7 6 cu. + 1 6 ci-cu.	2 W	6 Some Ci-cu.			Fine, sunny; squally at times.	18
19	29·696	29·456	61·6	52·8	56·1	54·2	55·9	55·0	SSE	0·5	E	✱3+✱2	·13	1·5 S	9·5 Some Ci-cu. + 6 cu.	1·5 S	10 N.			Cloudy; sho. bet. 4½h. + 6h., + const. r. after 16h. 45m.	19
20	29·116	29·236	58·0	✱53·8	55·1	54·5	54·8	51·8	NE	✱3+✱3	W	3 Sq.	·91	3 NE	10 N.	2·5 WNW ?	9·5 6 cu. ?			Cloudy; const. r. till aft. 10h.; evening squally.	20
21	29·283	29·155	63·9	50·8	54·8	50·9	54·1	51·1	WSW	3·0	WSW	2·0	·00	2·5 W	1 6 cu.	0	0			Fine; mostly sunny.	21
22	29·353	29·677	61·2	50·4	53·5	51·0	52·4	47·3	WNW	2+✱2	WNW	2·0	·06	2 N; 2 W	10 Some Ci-st.; 8 6 ci-cu.	n.d.	2 faint St.			Overcast, showery till 8h., then fine; clear dur. afternoon.	22
23	29·686	29·681	60·4	49·9	53·3	49·8	52·0	49·1	WSW	2·5	W	2·5	·03	0	0	n.d.	1 St.			Cloudy with sunny intvs.; brisk sh. at 12h. 30m.	23
24	29·752	29·762	61·8	48·1	53·4	48·5	52·3	47·9	W	1·0	W	1·5	·00	1 NWly	2 6 cu.	n.d.	10 6 cu.			Fine, sunny.	24
25 ✱	29·753	29·894	63·0	50·5	54·6	50·8	52·8	51·4	WNW	1+✱2	Variable	✱-2	·38	1·5 N; 2 NNW	10 6 cu.; 3 6 ci-st.	1·5 Nly	10 6 cu.			Cloudy; frequent brisk sho.; very changeable.	25
26	29·996	30·053	61·0	44·9	51·9	48·1	53·9	51·0	WNW	2·0	WNW	2·0	·00	0	0	2 NWly	9 6 cu. + St.			Fine; sunny at times; li. sho. at 21h.	26
27	30·060	30·016	58·5	53·7	57·7	55·2	54·8	52·4	W	2·0	WSW	2·0	·10	2 WNW + 2·5 W	10 Some Ci-st. + ac.	n.d.:	10 (frost) Some Ci-st.			Overcast; rain.	27
28	29·807	29·901	65·0	54·2	58·7	55·0	61·7	59·0	WSW	2+✱2	WSW	2+✱2	·02	2·5 W	10 6 cu.	n.d.:	10 (frost). Some Ci-cu.			Cloudy; li. passing sho.; squally.	28
29	29·971	30·034	✱62·7	✱56·6	62·7	59·0	58·7	57·5	WSW	✱3+✱3	SW	✱1·5	·10	2¼ W; 2¾ WSW	10 Some Ci-cu. + (2) 6 cu.	n.d.	10 St.			Cloudy; showery; thick h. after 14h.	29
30	30·096	30·163	64·9	✱54·2	55·6	54·9	54·2	50·8	WNW	1·5	W	2·0	·09	2 WNW	10 6 cu.	0	0			O'cast, drizz. r. till about 11½h.; fine, sunny after 13½h.; [cloudless at 24h.	30
31	30·228	30·220	66·3	46·0	50·9	49·0	56·8	53·2	W. var.	0·5-✱1	W	1-2	·00	0	0	0	0			Fine; morning h. d.; day sunny, nearly cloudless.	31
Sums.	921·884 (18 16 13 / 28)	922·327 (18 15 / 23)	1947·2 (12 14 / 8)	1620·9 (8 16 / 7)	1743·3 (16 16 / 19)	1650·5 (14 13 / 10)	1737·6 (15 16 / 18)	1649·2 (12 16 / 9)		56·0		54·5 (6 / 10)	4·67		248		234			
"Corrected Means."	29·738	29·752	62·8	52·3	56·2	53·2	56·1	53·2		1·81		1·75	~~4·67~~		8·0	7·8	7·5			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. = 29·738

"Corrected Mean" at 20 h. 45 m. = 29·752

To 29·668

Mean, reduced to 32°, and Sea-level, = 29·745

Highest corrected Reading at ~~8h.~~ Universal Time, on the 31st = 30·228

Lowest corrected Reading at ~~4h.~~ Universal Time, on the 20th = 29·116

Difference, or Monthly Range, = 1·112

S.-R. THERMOMETERS (in shade, &c.)

Highest in Month (corrected for Index Errors) on the 1st = 72°·2

Lowest in Month, (corrected for Index Errors), on the 26th = 44·9

Difference, or Monthly Range, = 27·3

"Corrected Mean" of all the Highest, (Col. 3) = 62·8

"Corrected Mean" of all the Lowest, (Col. 4) = 52·3

Difference, or Mean Daily Range, = 10·5

Calculated Mean Temperature of Month, = 57·5

HYGROMETER. "Corrected Mean" of 8 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7) = 56°·1

"Corrected Mean" of 8 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8) = 53·2

‡‡ Computed Temperature of Dew-Point, = 50·5

‡‡ Do. Elastic Force of Vapour, = ·369 4·14

‡‡ Relative Humidity (Saturation = 100), = 82

RAIN fell on 21 Days; Amount = 4·67 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	2	1	3	2	1	1	2	1	0	1·81	
21 h.	0	1	3	0	0	4	2	1	0	1·75	
Mean.	1	1	3	1	0	3	2	1	0	1·78 = 3.17 lbs.	

NOTATION USED IN GENERAL REMARKS.

a.	*denotes* aurora.		m.	*denotes* meteor.	
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Greatest Daily Range = 20·3 on the 31st

Observations made and Return verified by _____ (Signed) James Bolam + George Redpath.

15

11c

58

Leith
Aug. 1869

3

SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of September 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✳, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✳, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33,647 & 8. 9 h. Dry bulb. °	Wet bulb. °	21 h. Dry bulb. °	Wet bulb. °	Wind. 9 h. Direction	Force, 0—6.	21 h. Direction	Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1 ✳	30·252	30·214	59·5	47·1	55·5	52·2	53·9	53·0	N. var.	0·5	E	2·0	0·00	2 W / 0	3 Ci-st. / 0	? / n. d.	? / 9 St.		Fine, sunny.	1
2	30·162	30·098	63·8	51·9	56·0	54·9	54·9	52·9	E	2·0	E	2·0	·00	n. d.	10 Cu-f.	n. d. / 0	3 faint Ci-st. / 0		Fine, cloudy; sunny at times during afternoon.	2
3	30·090	30·123	62·4	53·3	58·7	56·7	56·1	55·2	ENE	1·5	ENE	2·0	·00	2 SE	9 Cu.	0	0		Fine; sunny at times.	3
4	30·198	30·238	58·5	52·7	55·3	53·6	53·1	52·9	E	1·0	NE	0·5	·00	1 W	9 Cu-f.	n. d.	2 faint St.		Fine; mostly sunny; thick h. aft. 16h., but clears at 21h.	4
5	30·304	30·316	56·8	50·7	52·2	51·9	55·2	54·9	NE	0·5	NNE	2·0	·00	n. d.	10 Fog.	n. d.	3 faint St.		Cloudy: thick h. at times.	5
6	30·369	30·336	56·1	52·3	53·5	52·9	53·9	52·9	ESE	0·5	NE. var.	~~0·5~~ 1	·00	n. d.	10 Fog.	0	0		Overcast; fog chiefly; cloudless at 21h.	6
7	30·311	30·205	59·0	51·2 ✳	53·4	52·0	56·8	55·9	E	1·5	E	1·5	·00	2 E	7 Cu.	1·5 S	9·5 Cu.	Thermos. read at 8h.	Morning, thick h.; day fine, mostly sunny.	7
8 ✳	30·153	30·021	65·0	48·8	56·0	54·0	56·8	54·9	E	1·0	E	2·0	·00	2 SSE	4 Small Cu.	2·5 SSE ly	10 Cu. chiefly		Fine; cloudy after 11h.; h. d. in the morning.	8
9	29·940	30·032	66·7	55·0	61·2	58·2	59·7	55·6	SW	2¼	SW	2¼	·00	2 WSW / 2¼ SW	4 Ci-cu. / 2 Cu.	2 WSW	10 Cu.	Thermos. read at 8h.	Fine, sunny.	9
10	30·065	30·060	71·2	56·8	60·8	58·8	61·7	58·0	W	1·0	NW var.	0·5	·01	1 W : 10	5 or 6 Ci-cu-f.	n. d. / n. d.	10 { Ci-st. / St.	do.	Fine, cloudy; sunny at times.	10
11	30·010	30·017	65·8	57·5	61·8	59·6	61·7	60·9	WSW	1-2	Calm	0	·06	2 WSW	10 Cu.	1·5 Wly : 10 (prob.) Cu-f.		do.	Cloudy; sho. after 17h. 30m.; hazy.	11
12	30·228	30·223	61·7 ✳	55·1 ✳	56·1	55·0	55·8	54·9	E	1·5	E	1·0	·07	2 E	10 St.	n. d. 2 thin St.: becoming 10.		do.	Cloudy.	12
13	30·153	30·306	66·1	53·6 ✳	56·7	55·9	53·8	52·9	W NW	1·0	E	2·5	·01	n. d.	10 N.	(3 E cirr.)	10 St.	do.	Morg. thick h.; day cloudy, with sunny intro.; li. drizz. sho. [after 18h. – faint co-ha. at noon	13
14	30·420	30·455	55·1	49·5 ✳	52·8	50·0	49·8	48·2	E	~~1·5~~ 2	E	1·0	·00	2 E	10 St.	n. d.	9 St.	do.	Fine, cloudy; very clear.	14
15 ✳	30·501	30·451	55·0	47·7 ✳	51·8	48·1	47·9	45·3	E	0·5	E. var.	0·5	·00	0·5 E	10 Cu.	0	0		Fine; sunny intro. during afternoon; very clear.	15
16	30·395	30·237	59·8	42·9	45·9	44·5	51·2	47·9	Variable	0·25	S W	2·0	·00	2 WSW	7 Cu.	0	0	Thermos. read at 8h.	Fine; hazy.	16
17	30·089	30·093	60·5	48·8	55·8	52·9	52·8	49·0	S	1·5 ~~2~~	WSW	2·0	·00	1·5 SWly / 2¼ SW	(2?) Ci-st. / 7 Cu.	0	0	do.	Fine; cloudy with short intro. of sunshine; cloudless at ~~21h.~~ 24h.	17
18	30·025	29·798	60·7	46·9	55·9	50·1	56·1	52·6	SW	2·5	SW ~~3~~ 3·5	·00	2·5 WSW	10 Cu.	(3·5 SW, cirr.)	10 Cor. Ci-st.		do.	Fine, cloudy; equally, with li. sho. at 24h.	18
19	29·493	29·454	56·1 ✳	43·6 ✳	51·8	49·1	43·9	41·2	WSW	~~2·5~~ 3	WSW	~~2·5~~ 3	·43	2 W / 2·5 W	6 Ci-st. / 4 Cu. rec.	0	0	do.	Variable; r. sqs. at 1h., + passing r. sho. at 11h. + 13½h.; bright [hail sh. at 15h.	19
20	29·464	29·526	53·0	42·1	43·9	41·6	45·9	42·0	W	~~2~~ 1·5	NW	2·0	·02	1 NWly / 0	2 Ci-st. / 0	0	0	do.	Fine; mostly sunny; shs. at 17h. 30m.	20
21	29·542	29·522	51·0	38·7	42·4	40·0	41·9	39·1	WSW	2·0	W	2·0	·00	2 NNW / 0	8 Ci-st. / 0	n. d.	2 St.	do.	Fine, cloudy; sunny at times.	21
22 ✳	29·622	29·748	53·0	35·9	43·6	39·3	43·0	39·5	W	~~2~~ 1·5	W	2·0	·02	1·5 NNW	0·5 (low) Cu.	n. d.	0·5 St.		Morng. h.-fr.; day fine, except sho. bet. 15h. 20m. + 15h. 45m.	22
23	29·772	29·696	52·5	38·0	44·7	40·9	44·9	42·0	W	~~1·5~~ 2	Variable	0·5	·00	1 W : 1	5 or 6 Ci-cu.	0	0		Fine; mostly sunny.	23
24	29·718	29·640	49·0	41·0 ✳	44·9	40·8	41·0	39·0	W	1·5	N	~~2·5~~ 2·5	·02	1·5 ENE	10 Cu-f.	n. d.	10 N. mo.		Fine, cloudy; sunny about noon; sli. sho. after 18h.; and [bright sho. at 24h.	24
25	29·912	30·031	53·2	40·1	47·8	41·0	44·9	40·0	NW	~~3~~ 2·5	W	1·5	·00	2·5 NNW	2 Cu.	0	0		Fine, sunny.	25
26	29·936	29·857	61·0	40·2	49·0	47·5	57·1	54·1	W	1·0	W	~~2·5~~ 3.	·10	?	10 Cor. Ci-st.	0	0		Cloudy; sho. bet. 6½h. and 8h., and at 15½h.; little [sunshine at 13h.	26
27	29·812	29·777	57·1	50·8 ✳	55·2	53·1	51·0	48·3	WSW	2·0	W	2·0	·07	n. d.	10 Cor. Ci-st.	0	0		Cloudy till 15h., then sunny; shs. at noon.	27
28	29·698	29·815	57·2	48·0	52·5	46·2	49·8	43·2	WNW	2·5	W	3·0	·01	2 NNW	1 Cu.	0	0		Fine; mostly sunny; sho. between 15h. and 16h.	28
29 ✳	29·902	29·797	53·3	47·6	49·8	44·1	48·9	45·0	NW	2·5	W	~~1~~ 2.	·00	2 NNE / 2¼ N	2 Ci-st. / 5 Cu.	n. d.	10 (prob.) Cor. Ci-st.		Fine, cloudy; sunny at times during forenoon.	29
30	29·780	30·000	52·5	47·8 ✳	51·5	46·0	48·6	45·0	N	2·0	N	~~2·5~~ 2.	·01	2 NNE	9 Cu-f.	n. d.	2 (low) St.		Fine; sunny at times; shs. at 9h. 45m.	30
Sums.	900·316	900·086	1752·6	1435·6	1576·5	1490·9	1552·1	1476·3			48·0	53·0	0·83		222		121			
"Corrected Means."	30·010	30·003	58·4	47·8	52·5	49·7	51·7	49·2			1·60	1·77			7·4		4·0			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. ..... = 30·010

"Corrected Mean" at 20 h. 45 m. ... = 30·003

29·929 / 077

Mean, reduced to 32°, and Sea-level, = 30·006

Highest corrected Reading at ~~7h.~~ 24h. Universal Time, on the 15th = 30·501

Lowest corrected Reading at ~~5h. 45m.~~ Universal Time, on the ~~20th~~ 19th = 29·454

Difference, or Monthly Range, ... = 1·047

S.-R. THERMOMETERS (in shade, &c.) Highest in Month (corrected for Index Errors) on the 10th = 71°·2

Lowest in Month, (corrected for Index Errors), on the 22nd = 35·9

Difference, or Monthly Range, ... = 35·3

"Corrected Mean" of all the Highest, (Col. 3), ... = 58·4

"Corrected Mean" of all the Lowest, (Col. 4), ... = 47·8

Difference, or Mean Daily Range, ... = 10·6

Calculated Mean Temperature of Month, = 53·1

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), ... = 52°·1

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), ... = 49·4

‡‡ Computed Temperature of Dew-Point, = 46·6

‡‡ Do. Elastic Force of Vapour, ... = ·312 3·61

‡‡ Relative Humidity (Saturation = 100), = 82

RAIN fell on 12 Days; Amount ..... = 0·83 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	2	1	9	0	1	2	12	2	1	1·60	
21 h.	3	2	9	0	0	3	9	2	2	1·77	
Mean.	2	2	9	0	0	3	10	2	2	1·68 = 2·82	

NOTATION USED IN GENERAL REMARKS.

a.	denotes	aurora.	m.	denotes	meteor.
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Observations made and Return verified by _____

Greatest Daily Range = 20°·8 on the 26th. (Signed) James Bolam & George Redpath

Title
Apr 1889

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SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of October 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✳, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✳, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22341 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33,647 & 8. 9 h. Dry bulb. °	9 h. Wet bulb. °	21 h. Dry bulb. °	21 h. Wet bulb. °	Wind. 9 h. Direction	9 h. Force, 0—6.	21 h. Direction	21 h. Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	9 h. Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	21 h. Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	30·110	30·127	53·2	42·9	49·6	45·5	48·8	45·0	N	1·5	ENE	2·0	0·00	2 N: 3 Sor-bi-cu.; 2 N: 5 cu.	(2·5 Ely?) 4-g-bree St.				Fine; cloudy, with short sunny intvs. about noon.	1.
2	30·031	29·854	51·0	43·3	46·0	43·1	43·9	42·1	NW	1·0	Wly	0·5	·00	1·5 W	9 Cuf.	0	0		Fine, cloudy; sunny at times; morg. & evng. hazy.	2
3	29·761	29·686	51·8	40·9	45·1	44·0	49·8	47·0	SE	1·0	NE	✳ 1·5	·00	1 W	9 Cuf.	n.d.	10 Cuf.		Fine, cloudy; hazy.	3
4	29·539	29·491	51·5	44·0	47·8	47·1	48·2	47·9	W	1·5	SE	0·5	·62	1·5 WSW	10 N.	n.d.	10 N.		Overcast, r. till 10h. 30m., and after 14h. 30m.	4
5	29·555	29·601	52·0	45·6	47·9	47·2	49·6	48·6	SE	1·0	SWly	0·5	·14	n.d.	10 Cuf.	n.d.	10 Cuf.		Cloudy; sho. till 6h.; sunny abt. noon; brisk sho. at 21h.	5
6 ✳	29·576	29·500	56·4	47·3*	50·9	48·8	47·8	46·0	WSW	2 & 2·5	SE	1 & ✳	·02	1·5 W	8 Sor-bi-cu.	n.d.: 10 Strat-ci-st. 0	0		Fine; mostly sunny; sho. at 7½h. & 14h.—Su.-ha. at 19h. 20m.	6
7	28·641	28·914	52·4	47·5	50·1	48·9	47·8	45·1	SE	2·0	W 3: ags. 4.		·35	2 ESE: 10 Rainy Cuf.	2 W NW; 4 West	5 W: 4 thick cirriform. 0·5 Scud.			Overcast; h. sho. at times; equally aft. 15h.—Su.-ha. at 21½h. & [moch. morng. at 24h. 25m.	7
8	29·141	28·984	51·3	41·8*	46·1	43·0	42·0	40·2	W	2·5	SSW-SSE	1·5 & ✳	·03	2·5 WNW	6 Cuf.	None visible.			Changeable; equally till abt. 6h.; sho. bet. 7¾h. & 8½h. & at [intervals after 15h. 40m.	8
9	28·835	28·942	52·4	37·3	42·0	39·7	44·1	42·0	S	1·0	W	2·0	·10	1 S	10 Cuf.	(2?) Wly: 8 Shet-bi-st. None visible.			Var.; const. r. bet. 10h. & 12½h., & brisk sho. separated by [sunny intvs., during afternoon.—Su.-ha. at 24h.	9
10	29·133	29·330	56·3	41·5	49·3	46·8	44·9	43·4	S	1·0	Variable	0·25	·02	1·5 S: 7 Sor-bi-st.	1·5 WSW	3 Cu.			Fine; mostly sunny; pass. sho. at 15h.; even. hazy.	10
11	29·462	29·542	51·5	38·9	43·4	42·5	41·7	40·8	W	0·5	WSW	0·5	·00	0	0	1·5 SSWly	3 St.		Fog, morn. & even.; day fine, sunny.	11
12	29·605	29·654	52·2	38·7	44·9	44·3	49·8	46·0	W	1·0	NNE	1·5	·28	n.d.	10 N.	n.d.: 10 Sor-bi-st.			Morng. dense overcast sky followed by h. r. bet. 8h. & 8½h., & [early const. r. till 13½h.; sho. after 15½h.	12
13 ✳	29·781	29·918	51·1	41·7	45·1	42·0	45·9	45·0	W	1·5	Calm	0	·19	0·5 NE; 1¾ NNE	2 bi-cu.; 5 cu.	n.d.: 9 Cuf. & Sor-bi-cu.			Cloudy; sho. at 13¾h., & const. r. bet. 16½h. & 19¼h.	13
14	29·938	29·872	50·0	39·3	46·4	45·4	46·0	43·9	W	1·0	SSEly	0·5	·01	1 W	9 Cu.	n.d.	9 St. chiefly.		Morng., thick h.; day fine, cloudy; sunny bet. 14h. & 16h.	14
15	29·758	29·644	54·0	40·0	46·3	44·3	53·8	51·6	S	1·0	SW	2·0	·02	1·5 W	9 St.	n.d.: 10 Sor-bi-st.			Cloudy; sho. bet. 12h. & 13h., and at 21h.	15
16	29·692	29·725	53·8*	47·8	49·9	49·1	49·0	48·1	W	1·0	Calm	0	·03	n.d.	10 Fog	n.d.: 10 Sor-bi-st.			Overcast; fog chiefly; sho. after 16h. 45m.	16
17	29·756	29·688	49·0*	44·2*	45·1	44·6	45·9	45·0	W	1·0	Wly	0·5	·00	n.d.	10 Fog	0	0		Fog.	17
18	29·621	29·489	54·0	39·5	46·1	45·2	49·1	47·1	ESE	1·5	E	2·0	·00	2 SE	7 Cu.	n.d.: 6-10 Sore St.			Fine, cloudy; sunny bet. 10h. & 11h., & from 13½h. till 15h.	18
19	29·389	29·326	53·3	46·5	50·2	48·7	50·8	48·0	ESE	2·0	E 3 & ✳	·00	2·5 SE	8 Cu.	3·5 E: 10 Scud & N.				Fine, clear; sunny till about 15h.; equally, with li. sho. [at 24h.	19
20 ✳	29·365	29·474	52·6	44·9	48·1	46·8	50·8	49·7	E	2¼	E ✳ & 3.	·20	2·5 E: 4 Sor-bi-cu. & 3 ESE: 2 Cu. & cend.			3 ESE: 3 Scud.—Amt. variable.			Cloudy; showery.	20
21	29·549	29·659	51·6	47·0*	49·5	47·4	48·6	47·2	ESE	2 & 2·5	E. by N	2·5	·42	2·5 ESE	10 Cu.	2·5 E: 6-9 Cu.-N.			Cloudy; frequent sho.; specially h. sho. at 9h. 20m., [10h. 5m., and 19h. 20m.	21
22	29·739	29·825	50·6*	46·6*	48·9	47·0	48·0	44·6	ENE	2·5 & 2	ENE	3 & ✳	·30	3 ENE	10 N.	n.d.: 10 becoming N.			Overcast; h. sho. at times; evening equally.	22
23	29·926	30·050	50·0	44·6*	47·2	45·5	45·5	43·0	E	2·0	E	✳ & 2	·74	2 E	10 Cuf.	n.d.	1 Cuf.		Heavy sho. till 7h., then fine; sunny aft. 11h.	23
24	30·146	30·250	48·5	40·4*	46·1	44·2	41·9	41·1	NE	✳ & 2	SE. var.	0·25	·05	2 ENE	9 Cuf.	n.d.	9 St.		Cloudy; a few li. sho.; sunny intvs. dur. afternoon.	24
25	30·348	30·397	45·6	39·9	42·9	41·6	42·8	40·3	SE	1·0	E	1·5	·07	1·5 ESEly	10 Cu. & N.	n.d.	10 St.		Cloudy; sho. at times; sunny bet. 11h. and 12h.	25
26	30·390	30·342	45·0	38·2	41·9	40·1	44·5	42·0	E	1·0	E	1·5	·00	1·5 E	10 Cu.	n.d.	9 Cu.		Fine, cloudy; slight sho. at 8h.	26
27 ✳	30·177	29·986	46·7	41·9	44·9	41·6	46·0	43·0	E	2 & ✳	ENE	2 & ✳	·08	1·5 SSWly: 10 Sor-bi-cu. & 2·5 E: approaching N.		3 Ely.: 10 Sc. & r. becoming N.			Cloudy; showery.	27
28	29·932	29·851	46·4	39·8*	44·2	41·3	41·9	38·9	NNW	1·0	WSW	1·0	·02	1·5 NE	10 Cu.	0	0		Cloudy; sho. about 5h.	28
29	29·749	29·644	52·0	38·3	43·9	41·5	49·8	47·7	W	0·5	SW	2·5	·02	n.d.	10 Haze	n.d.: 10 St. & Cu.			Cloudy; drizz. sho. bet. 5½h. & 8h.; sunny intvs. during [afternoon; hazy.	29
30	29·491	29·388	57·0	45·1*	53·8	49·6	45·1	44·1	W	✳ & 3	W	2 & ✳	·09	1·5 W	10 Cuf.	n.d.	10 N.		Cloudy; equally; li. sho. aft. 16½h., & brisk sho. aft. 18¾h.	30
31	29·687	29·680	51·7	41·9	45·0	42·2	48·9	46·1	WSW	1·5	SW	2 & ✳	·01	0	0	2 NW; 2·5 SW	4 bi-st; 2 Cuf.		Fine, sunny.	31
Sums.	919·823	919·833	1594·9	1317·3	1448·6	1389·0	1452·7	1390·5		46·5		47·0	3·31		262		277			
"Corrected Means."	29·672	29·672	51·5	42·5	46·7	44·8	46·9	44·8		1·49		1·52	3·31		8·5		7·3			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. ..... = 29·672

"Corrected Mean" at 20 h. 45 m. ... = 29·672

Mean, reduced to 32°, and Sea-level, = 29·672

Highest corrected Reading at 0h. 40m. Universal Time, on the 25th = 30·397

Lowest corrected Reading at 9h. Universal Time, on the 7th = 28·641

Difference, or Monthly Range, ... = 1·756

S.-R. THERMOMETERS (in shade, &c.)

Highest in Month (corrected for Index Errors) on the 30th = 57°·0

Lowest in Month, (corrected for Index Errors), on the 9th = 37·3

Difference, or Monthly Range, ... = 19·7

"Corrected Mean" of all the Highest, (Col. 3), ... = 51·5

"Corrected Mean" of all the Lowest, (Col. 4), ... = 42·5

Difference, or Mean Daily Range, ... = 9·0

Calculated Mean Temperature of Month, = 47·0

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), ... = 46°·8

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), ... = 44·8

‡‡ Computed Temperature of Dew-Point, = 42·6

‡‡ Do. Elastic Force of Vapour, ... = 0·273

‡‡ Relative Humidity (Saturation = 100), = 86

RAIN fell on 23 Days; Amount ..... = 3·31 Inches.

Wind. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	2	1	8	4	3	0	1	2	1	0	1·49
21 h.	1	1	10	3	2	4	7	0	3	1·52	
Mean.	1	1	9	4	3	2	9	1	1	1·50 = 2·25 lb	

NOTATION USED IN GENERAL REMARKS.

a.	denotes	aurora.	m.	denotes	meteor.
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Greatest Daily Range = 15°·1 on the 9th

Observations made and Return verified by _____

(Signed) James Bolam and George Redpath.

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SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of November 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ·✳·, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ·✳·, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33,647 r.8. 9 h. Dry bulb °	Wet bulb °	21 h. Dry bulb °	Wet bulb °	Wind. 9 h. Direction	Force 0—6.	21 h. Direction	Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1	29·050	29·228	50·0	42·1	46·9	44·5	45·4	41·4	SE	2·0	W	4 in ags.	0·05	3 SSE	9 cu.	4 W	10 Sc.		Variable; showery; very squally after 11h.	1
2	29·503	29·695	50·0	42·9	45·6	40·7	42·9	40·0	W	2·5-3·5	WSW	2-1	·00	2 NW	10 St.	0	0		Squally; cloudy till about noon, then mostly sunny.	2
3 ✳	29·548	29·595	48·0	40·6	44·0	43·2	46·9	46·0	ESE	0·5	NW	1·0	·11	2 WSW	10 Sor. Ci-st.	2 W-ly	10 Cuf.		Cloudy; sho. till after 11h.	3
4	29·736	29·798	46·9	35·9	43·7	42·5	35·9	35·1	ENE	1·5	WNWly	0·25	·34	2 E	10 Cuf. roe.	0	0		Temperature falling rapidly. Overcast; nearly const. r. till 11h.—Cloudless at 21h., with	4
5	29·727	29·891	50·0	34·1	43·0	41·2	48·1	45·0	SE. var.	0·5	WSW	1·2·5	·01	n. d.	10 Co.	2¼ W	9·5 Cu.		Fine; mostly sunny; hazy.	5
6	30·156	30·167	52·1	41·0	45·6	42·2	52·1	49·9	W	1·5	WSW	2·5	·00	2 NNW	5 Cuf.	3 W	10 Cuf.		Fine, sunny; rather hazy.	6
7	30·169	30·325	58·6	50·1	56·2	54·5	50·3	46·9	W	2·5-3	W	2·2·5	·00	2 NW 3 W	2 Ci-cu. 7 Cuf.	2 W	7 Ci-cu.	Thermos. read at 8h.	Fine, cloudy; sunny intvs. during forenoon.	7
8	30·410	30·259	54·8	47·1	49·6	46·9	54·8	52·4	W	2·0	W	2·5	·00	2 W	10 Cuf. Ci-cu.	2 W	10 Ci-cu.	Do. do.	Fine; cloudy, with short intvs. of sunshine.	8
9	30·255	30·286	56·3	51·0	53·8	51·7	51·0	48·9	W	2-2	W	2·5	·00	2 NW 3 W	10 Ci. st. chiefly (2) Cu.	2·5 W: 3 thin Cu. Amt. var.		do. do.	Squally bet. 2h. and 6h.; day fine, mostly sunny.	9
10 ✳	30·308	30·343	55·7	49·8	51·8	49·9	50·8	48·9	W	2¼	W	2·2·5	·00	2·5 W	2 Cuf.	0	0		Fine, sunny; h. d. in the morning.	10
11	30·400	30·365	52·0	47·8	49·8	47·4	48·0	46·2	W	1·5	W	1·0	·00	2 W	10 Cu.	n. d.	10 St.		Fine; mostly cloudy; hazy.	11
12	30·299	30·315	54·7	47·1	52·6	48·9	50·7	48·0	SW	1·5-2	NWly	0·25	·00	2 WSW	9·5 Cuf.	2 W-ly	10 Cu.		Fine, cloudy; some haze.	12
13	30·306	30·227	50·7	41·7	43·2	42·8	41·7	40·8	NE	0·5	W	1·5	·00	n. d.	10 Wet F.	n. d.	1 (prob.) St.		Thick f. till 9h. 20m., r. aft. 13½h.; sli. sunshine about noon.	13
14	30·231	30·219	47·9	37·5	43·9	42·5	46·0	44·3	W	1·0	Calm	0	·00	1·5 WSW	2 mod. Ci-st.	n. d.	10 St.		Fine, hazy; sunny at times.—So. ha. at noon.	14
15	30·148	30·143	55·4	43·1	47·4	46·2	51·8	47·9	W	1·0	SW	1-2.	·00	2 W	9 Cuf. th.	n. d.	7 St.		Fine; mostly cloudy; hazy.	15
16	30·462	30·618	53·5	39·0	43·1	40·3	39·0	37·0	W 1·0		SEly	0·25	·04	0	0	0	0		Fine, sunny; nearly cloudless; rather hazy.	16
17 ✳	30·614	30·601	47·0	33·7	36·1	35·3	43·9	42·3	W	0·5	Calm	0	·00	0	0	n. d.	10 St.		Fog; thick h.-fr. in the morning.	17
18	30·569	30·529	51·3	42·8	45·4	44·4	46·9	46·0	NE	0·5	NE. var.	0·75	·02	1·5 NE	1 Cu.	n. d.	10 St.		Fog, with drizz. sho. between 15h. and 16h.	18
19	30·546	30·550	55·2	46·2	50·8	47·0	51·7	48·0	SW	2·0	W	0·5-1	·00	0·5 NEly 1·5 W	4 Ci-st. 2 Cu.	n. d.	10 St.		Fine; mostly sunny; evening cloudy.	19
20	30·561	30·497	52·4	44·4	48·3	47·0	44·4	41·3	NE	0·5	W	1-2	·00	1·5 Ly: 10 Haze roe.		n. d.	10 St.		Thick h.; evening cloudy, but clear.	20
21	30·368	30·244	45·6	39·1	44·0	41·3	43·9	42·0	W	2¼	ESE	1·0	·00	2 W	10 Cuf.	n. d.	9·5 St.	Thermos. read at 8h.	Cloudy; fine.	21
22	30·042	30·055	55·9	42·0	52·0	49·2	47·3	44·0	S	2-3	WSW	1·5-2	·06	2-3 SSSW:	10 Sor. Ci-st. roe.	n. d.	10 St.		Overcast; showery after 11½h.; squally at times.	22
23	30·195	30·112	47·9	41·1	44·3	42·0	43·0	40·0	W	2·0	WSW	2·5	·00	0	0	0	0		Fine, sunny; almost cloudless.	23
24 ✳	29·763	29·233	49·7	42·2	45·9	42·1	49·0	45·3	SW	1-2·5	SW	1-3	·00	1·5 NW 2 W	3 Ci-cu. 4 Cuf.	n. d.	10 Species?		Fine; mostly sunny till about 12h., then cloudy.	24
25	29·265	29·558	49·0	33·0	37·7	34·8	33·4	30·0	W	1·5	W	2-3	·00	0	0	0	0		Fine, sunny.	25
26	29·481	29·525	35·4	31·2	33·0	31·5	31·2	?	W	1·0	W	2·0	·00	1·5 W	1 Sor. Ci-cu	0	0		Fine; mostly sunny; sli. s. sho. bet. 11h. and 11½h.	26
27	29·824	30·150	37·0	31·0	34·7	31·0	33·9	30·0	NNW	2·0	NNW	2·5	·00	2 NNE	6 Cuf.	0	0		Fine, clear, sunny.	27
28	30·217	30·208	40·3	30·9	34·8	32·0	39·1	36·8	W	1·5	W	2·5	·00	2 N	7 Ci-cuf.	n. d.	4 St.		Fine, cloudy; sunny at times.	28
29	30·107	30·028	43·7	38·0	41·3	40·0	41·2	39·0	WNW	1·5	SW	1-2	·00	2 WNW	10 Cuf.	1 Nly	10 Ci-cuf.		Cloudy; hazy.	29
30	30·013	30·112	44·8	38·8	42·3	39·8	41·2	39·1	S.	1·5	SW	1·5	·00	1·5 SSW	10 Cuf.	None visible.	8 Ci-st.		Fine, cloudy; rather hazy.—Su. ha. at 21h.	30
Sums.	902·273	902·876	1491·8	1225·2	1350·8	1282·8	1345·5	1242·5		45·0		49·5	0·63		205		188			
"Corrected Means."	30·076	30·096	49·7	40·8	45·0	42·8	44·9	42·8		1·50		1·65			6·8		6·3			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. = 30·076

"Corrected Mean" at 20 h. 45 m. = 30·096

70. 30·009 ·077

Mean, reduced to 32°, and Sea-level, = 30·086

Highest corrected Reading at ~~9h.~~ Universal Time, on the 16th = 30·618

Lowest corrected Reading at ~~12h.~~ Universal Time, on the 1st = 29·050

Difference, or Monthly Range, = 1·568

S.-R. THERMOMETERS (in shade, &c.) Highest in Month (corrected for Index Errors) on the 7th = 58°·6

Lowest in Month, (corrected for Index Errors), on the 28th = 30·9

Difference, or Monthly Range, = 27·7

"Corrected Mean" of all the Highest, (Col. 3), = 49·7

"Corrected Mean" of all the Lowest, (Col. 4), = 40·8

Difference, or Mean Daily Range, = 8·9

Calculated Mean Temperature of Month, = 45·3

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), = 45°·0

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), = 42·8

‡‡ Computed Temperature of Dew-Point, = 40·3

‡‡ Do. Elastic Force of Vapour, = ·249 2·86

‡‡ Relative Humidity (Saturation = 100), = 84

RAIN fell on 7 Days; Amount = 0·63 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.	1	3	2	2	2	3	17			1·50	
21 h.	2	1	1	1		4	18	1	2	1·65	
Mean.	1	2	2	1	1	4	18	0	1	1·58 =	2·50

NOTATION USED IN GENERAL REMARKS.

a.	*denotes* aurora.		m.	*denotes* meteor.	
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Greatest Daily Range = 16°·0 on the 25th

Observations made and Return verified by _____

(Signed) James Bolam & George Redpath.

Leith
Nov 1889

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SCOTTISH METEOROLOGICAL SOCIETY.

OBSERVATIONS taken at LEITH, County of Edinburgh, in Lat. 55° 59′ N., Long. 3° 10′ W., during the MONTH of December 1889; Distance from Sea, Half-Mile.

The Hours of Observation are of Universal Time, same as Greenwich Mean Time.

NOTE.—*All the 9 h. Barometric Observations in this Schedule, except those marked ✳, were made with a Kew Marine; all the 20 h. 45 m. Observations, and those marked ✳, with a Fortin Standard.*

Days of Month.	Barometer, Corrected and Reduced to 32° and Sea Level. 9 h. Inches.	20 h. 45 m. Inches.	Self-Registering Thermometers, In Shade 4 feet above Grass. Max. Kew No. 22241 °	Min. Kew No. 22218 °	Hygrometer. Kew No. 33647 & 8. 9 h. Dry bulb. °	9 h. Wet bulb. °	21 h. Dry bulb. °	21 h. Wet bulb. °	Wind. 9 h. Direction	9 h. Force, 0—6.	21 h. Direction	21 h. Force, 0—6.	Rain. Amount in inches.	Clouds. 9 h. Velocity (0—6), and Direction.	9 h. Amount, (0—10), and Species.	21 h. Velocity (0—6), and Direction.	21 h. Amount, (0—10), and Species.	Special Remarks.	General Remarks. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, &c.	Days of Month.
1 ✳	30·233	30·297	45·5	37·1	38·9	38·0	44·0	41·1	Calm	0	Variable	1·0	0·00	1S WSW	10 Cuf. rh.	1W: 0 / 0	10 Shwly Ci-st / 0		Cloudy: thick h.; wg. much clearer.—Fu. ha. at 21h.	1
2	30·309	30·355	45·1	34·2	42·9	39·3	35·6	34·0	NW	1·0	W	0·5	·00	1W NW	10 Cuf.	1W NWly	7 mod. Ci-st.		Cloudy; thick h. at times.	2
3	30·414	30·468	38·1	31·9	35·7	34·5	31·9	29·3	W NW	0·5	E	1·0	·00	0·5 W NW	4 Cuf.	0·5 NWly: 0	7 Shwly Ci-st / 0		Thick h. till abt. noon; mostly sunny afternoon.—Fu. ha. at 21h.	3
4	30·565	30·589	39·7	27·6	32·7	31·0	37·2	36·0	SSE	0·5	Calm	0	·00	1·5 S	10 Cu.	1·5 E	10 Cu.		Fine; morg. & eg. cloudy, day sunny; sli. sho. abt. 17½h.	4
5	30·671	30·720	41·1	35·6	37·8	36·1	38·1	35·1	SE	0·5	SSE	0·5	·00	n.d.	10 S.	1 S	10 Cuf.		Fine, hazy; sli. sun at times during afternoon.	5
6	30·542	30·111	44·9	35·5	36·9	34·0	44·9	42·0	S	1·5	WSW	2 & ~~2·5~~	·00	1·5 SWly	10 St. rh.	n.d.	10 N.		Cloudy, hazy; li. sho. bet. 11h. & 13h., and at 21h.	6
7	30·146	30·185	44·9	37·7	39·4	36·0	38·9	36·4	W NW	1·0	WSW	2·0	·05	0	0	0	0		Cloudless; sunny; hazy.	7
8 ✳	30·112	29·748	48·9	38·3	42·9	41·0	48·6	47·0	WSW	1·5	SW	~~2~~-3	·06	1·5 W	10 Cuf.	3·5 WSW (oc)	10 (prob. Sor) Ci-st.		Cloudy; hazy; evening showery.	8
9	29·485	29·292	58·2	43·8	52·3	49·9	44·0	40·8	W by S	2·5 & 2	W ~~2·5~~ & 3·5		·01	1 WNWly / 3 W by S	3 Ci-st. / 6 Cuf.	3 W	1 Cuf.		Squally; mostly sunny; li. sho. about 11h.	9
10	29·037	29·100	44·7	36·1	40·6	38·2	36·1	35·0	W	2·5	W	1·0	·09	1·5 W: 3 Sor Ci-st & Cuf.		1·5 NW	10 Sor Ci-st.		Cloudy; brisk sho. at intervals till 6h.	10
11	29·434	29·736	38·7	33·8	37·0	33·0	34·9	31·3	NW	2·5	W	2·0	·00	1·5 NWly	1 Ci-st.	1·5 NW	7 Ci-cuf.		Fine, sunny.	11
12	29·860	29·606	39·8	29·0	30·9	30·0	39·8	37·4	W	0·5	E	2 & ~~2·5~~	·00	1·5 W	1 Cuf.	n.d.	10 (prob.) St.		Thick h., with h.-fr. till about 14h., then cloudy.	12
13	29·530	29·922	43·0	39·1	40·2	37·9	39·9	38·0	WSW	2·0	W	1·5	·01	2 W by S	2 Cu.	0	0		Fine; sunny at times.	13
14	30·166	30·118	43·9	32·4	34·4	34·0	43·9	40·8	W	0·5	SW	2 & ~~2·5~~	·01	1·5 WSW	1 patch thick.	n.d. 10:	becoming N.	[Sho. before, and after 21h.	Thick f. with h.-fr. till abt. 12½h.; sli. sun at times afternoon;	14
15 ✳	30·296	30·210	47·0	39·5	43·6	42·1	42·6	40·8	W	1·5	SWly	0·25	·04	0	0	n.d.	3 faint St.		Fine, sunny; hazy.	15
16	30·184	30·258	50·0	41·9	47·5	45·5	46·9	42·0	WSW	1 & ~~1·5~~	SW	~~2~~ & 2·5	·00	2 W	10 Cuf.	n.d.	10 St.		Squally bet. 3h. & 5h.; day fine, sunny at times.	16
17	30·016	30·123	55·0	45·9	54·2	51·4	46·9	44·1	WSW	~~2~~ & 3·5	W	2·0	·01	3 WSW	10 Cu.	n.d.	3 faint St.		Fine; cloudy, with sunny intervals; squally.	17
18	29·727	30·109	54·6	39·8	51·4	47·1	40·3	37·8	WSW	2·5 & ~~3·5~~	WSW	2 & ~~2·5~~	·04	1 WSW: 3 Ci-cu. & Ci-st. / 2·5 WSW	2 Cu.	0	0		Variable; squally, with sho. bet. 11h. & 13h.; fine, sunny [after 14h.	18
19	29·875	29·582	47·8	39·9	45·3	42·4	42·9	41·2	W	~~3·5~~ & 4	W	~~2~~-3	·38	1·5 W (sou) / 3 SW (sou)	1 faint irreg. Ci-st. / 2 N.	2 Wly	3 thin Cuf.—Amount variable.		Cloudy; rain chiefly; very squally.	19
20	29·507	29·389	46·0	34·7	39·9	37·6	36·2	35·0	W	1·5	WSW	~~2~~ & 3	·07	Direction & Species? Amt. 10.		0	0		Fine during day; S. & sl. sho. after 18h.	20
21	29·447	29·571	40·6	31·9	36·9	35·2	31·9	31·1	W	2 & 4	SWly	0·25	·00	0	0	0	0		Fine, sunny; evening thick h.-fr.	21
22 ✳	29·390	29·574	39·9	31·9	36·1	35·8	39·9	39·0	E	0·5	W	2 & ~~2·5~~	·32	1 SW	10 N.	n.d.	10 N.		Overcast; drizzling rain.	22
23	29·822	29·700	46·8	37·2	37·5	37·0	46·4	43·4	Variable	0·5	WSW	2 & ~~2·5~~	·01	1·5 Wly	8 Cor f.	2 Wly	7 Cuf.		Cloudy; thick f. at times; evening much clearer.	23
24	29·419	29·961	50·2	38·0	43·7	41·8	38·2	36·1	W	3 & ~~3·5~~	W	2·5	·08	3 W (oc).	10 N.	0	0		O'cast, r. till noon, then fine; sli. sun dur. afternoon.	24
25	30·296	30·285	49·0	36·1	45·3	41·2	48·8	44·2	W	~~1~~ & 1·5	SW	~~2·5~~ & 3	·00	1·5 W NW	2 Cuf.	3 WSW: 3	Cuf.—Amt. variable.		Fine, sunny; evening cloudy.	25
26	30·348	30·463	49·7	46·7	48·3	44·6	46·9	45·1	WSW	2·0	Calm	0	·00	1·5 W	2 Cuf.	n.d.	10 St.		Fine, cloudy; hazy.	26
27	30·501	30·465	46·9	34·5	43·8	41·0	34·5	32·5	SSE	1 & ~~1·5~~	ESE	1·0	·00	1·5 SSW	8 Cu.	1 SSE	2 Cu.		Cloudy; hazy.	27
28	30·311	30·184	35·2	29·7	33·9	32·2	29·9	28·0	S	0·5	SW	1-~~1·5~~	·00	1·5 S	10 Cu.	1 N W	3 Cu.		Fine, cloudy; hazy.	28
29 ✳	30·219	30·327	38·7	29·9	34·2	32·8	34·9	34·2	W	0·5	Calm	0	·00	1 W	10 Cu. rh.	0	0		Fine, cloudy; rather hazy.	29
30	30·312	30·123	45·0	29·9	36·5	36·2	45·0	42·8	Calm	0	SW	2·5	·00	n.d.	10 S.	2·5 WSW	8 Cu.		Thick f. till about 14h., then cloudy; shs. at 21h.	30
31	29·921	30·003	49·4	42·6	48·0	44·6	42·9	41·3	W	~~2~~ & 3	W	2·0	·07	n.d. / 1·5 & 2¾ WSW:	2 mod. height Ci-st. / 7 Cuf. & scud.	n.d.	10 N.		Squally; mostly sunny; sho. after 15½h.	31
Sums.	930·095	930·524	1403·3	1122·2	1268·7	1201·4	1252·9	1182·8		45½		51·5	1·25		191		174			
"Corrected Means."	30·003	30·017	45·3	36·2	40·9	38·8	40·4	38·2		1·46		1·66	1·25		6·2	5·9	5·6			
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			

BAROMETER, "corrected Mean" at 9 h. = 30·003

"Corrected Mean" at 20 h. 45 m. = 30·017

29·933 .077

Mean, reduced to 32°, and Sea-level, = 30·010

Highest corrected Reading at ~~4 h.~~ Universal Time, on the 5th = 30·720

Lowest corrected Reading at ~~4 h.~~ Universal Time, on the 10th = 29·037

Difference, or Monthly Range, = 1·683

S.-R. THERMOMETERS (in shade, &c.)

Highest in Month (corrected for Index Errors) on the 17th = 55°·0

Lowest in Month, (corrected for Index Errors), on the 4th = 27·6

Difference, or Monthly Range, = 27·4

"Corrected Mean" of all the Highest, (Col. 3), = 45·3

"Corrected Mean" of all the Lowest, (Col. 4), = 36·2

Difference, or Mean Daily Range, = 9·1

Calculated Mean Temperature of Month, = 40·7

HYGROMETER, "Corrected Mean" of 9 h. and 21 h. Reading of Dry Bulb (Cols. 5 and 7), = 40°·6

"Corrected Mean" of 9 h. and 21 h. Reading of Wet Bulb (Cols. 6 and 8), = 38·5

‡‡ Computed Temperature of Dew-Point, = 35·8

‡‡ Do. Elastic Force of Vapour, = ·210 ~~2·44~~

‡‡ Relative Humidity (Saturation = 100), = 84

RAIN fell on 15 Days; Amount = 1·25 Inches.

WIND. Direction	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
9 h.			1	1	4	7	20	2	3	1·46	
21 h.			3		2	7	15		4	1·66	
Mean.	0	0	2	0	3	4	18	1	3	1·56 =	2·43 lbs

NOTATION USED IN GENERAL REMARKS.

a.	denotes	aurora.	m.	denotes	meteor.
ci.	,,	cirrus.	ms.	,,	meteors.
ci.-cu.	,,	cirro-cumulus.	n.	,,	nimbus.
ci.-st.	,,	cirro-stratus.	r.	,,	rain.
cu.	,,	cumulus.	h. r.	,,	heavy rain.
cu.-f.	,,	cumulus-form.	c. h. r.	,,	continued heavy rain.
cu.-st.	,,	cumulo-stratus.	st.	,,	stratus.
d.	,,	dew.	sc.	,,	scud.
f.	,,	fog.	sl.	,,	sleet.
fr.	,,	frost.	s.	,,	snow.
h.-fr.	,,	hoar-frost.	so. ha.	,,	solar halo.
h.	,,	haze.	sq.	,,	squall.
h. d.	,,	heavy dew.	sqs.	,,	squalls.
hl.	,,	hail.	t.	,,	thunder.
l.	,,	lightning.	t. s.	,,	thunder storm.
li. cl.	,,	light clouds.	w.	,,	wind.
li. sh.	,,	light showers.	g.	,,	gale of wind.
lu. co.	,,	lunar corona.	n. d.	,,	not discernible.
lu. ha.	,,	lunar halo.			

TABLE FOR ESTIMATING FORCE OF WIND.

Estimated Force, 0—6.	Common Designation.	Estimated Force, 0—6.	Common Designation.
0	Calm.	3·	Very fresh.
0·5	Very light air.	4	Blowing hard.
1·	Light air.	5	Blowing a gale.
1·5	Light breeze.	6	Violent gale.
2·	Fresh breeze.		

* Where an asterisk appears in Columns 3 and 4, the Highest Temperatures for the 24 hours (preceding 21 h.) were registered during the *Night*, and the Lowest Temperatures during the *Day*.

‡‡ These Hygrometrical Deductions are calculated from Glaisher's Hygrometrical Tables, Sixth Edition.

Observations made and Return verified by _____

Greatest Daily Range = 15·1 on the 30th

(Signed) James Bolam & George Redpath. A.M.

Smith
Dec 1889
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