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$42^{\circ} 4'$, leaving a discrepancy of $26'$, or there is no visible light at that position indicated, instead of being of great brightness.

Again, for the corresponding radius of the secondary bow we find $50^{\circ} 17'$, and the difference between this and $42^{\circ} 32'$ is $7^{\circ} 45'$, so that according to Mr. Airy the light should be strongly visible to points distant $7^{\circ} 45'$ from each other; whilst the utmost limit to which the light can be traced is still distant $8^{\circ} 30'$, and this difference leaves a strong presumption against the theory, and induces a corresponding argument in favour of the corpuscular theory, with which this fact is in accordance.

III. *Meteorological Observations taken at St. George's, Bermuda, in the December half-year of 1837; introduced by Corrections of Observations for the June half-year. By Lieut.-Col. EMMETT, R.E.**

MEAN height of barometer (Lond. & Edinb. Phil. Mag. Nov. 1837.) should be for July $30\cdot069$, and not $30\cdot161$, which is the height not corrected. The mean heights for August and September should each be reduced $\cdot020$, $\cdot054$ having accidentally been added for capillary action instead of $\cdot034$.

In the horary differences forwarded to Dr. Dalton it will be observed the numbers of observations at the different hours vary; they were also not always made on the same days: but in revising my journal I selected those days only for 9 A.M. and 4 P.M., on which the observations were made for both hours; and upon that revision the tables in your January number were prepared. Such has been the course in the half-yearly observations now inclosed, completing the year 1837. It is worth notice that the general fall of the barometer from 1 P.M. to 4 P.M. usually and considerably exceeds that from 9 A.M. to 1 P.M. Page 46, lines 4 and 5, should be subtracted from the "former," not the latter.

From a frequent comparison of the dew-point *directly taken* with the wet-bulb thermometer I feel much confidence in it, where suspended in a large room free from currents and fully open to the air; but where exposed to currents, reflections from the ground, &c. it cannot be fully relied upon, both it and the register thermometer being affected thereby, and this it is often difficult to avoid. As I before stated, the difference between the wet and dry \times by 2 and taken from the height of the dry, gives the dew-point nearly, but rather too low, as the multiple should be -2 ; errors are therefore nearly doubled.

* Communicated by the Author.

Meteorological Observations taken at St. George's, Bermuda, in the December half-year of 1837.

Month.	Barometer.				Thermometer.				Hygrometer.				Rain.		Winds, &c.		
	Mean.	Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.	Temp. ture of Sea	Dew Point.	Vapour.	Day.	Night.	Total.	Gales.	Prevailing.	Th. & Light.
July.	30.031	30.398	29.908	.490	76	81.5	69.5	12	79.5 82	70.3	.728	2.99	2.41	5.40	2	1st SW. 2nd NW.	Th. & Light. 9 Lightning 5.
August.	30.071	30.366	29.936	.430	78.2	83.5	72	11.5	81 84	69.2	.702	.01	.73	.74	1	1st NW. 2nd SW. 3rd SE.	Th. & Lig. 4. Light. only 6.
Sept.	30.117	30.360	29.986	.374	76.61	83.5	71.5	12	82 79.5	66.48	.634	.15	1.00	1.15	1	1st NE. 2nd SW. 3rd SE.	Light. & Th. 1. Light. only 4.
Oct.	29.977	30.330	29.594	.706	71.95	78.5	64.5	14	78 75.5	66.30	.627	3.80	6.05	9.85	3	1st NE. 2nd SE. 3rd SW.	Li. & Th. 3. } Li. only 6. } distant
Nov.	30.107	30.430	29.736	.694	65.99	73.5	59	14.5	69 67.5	58.25	.494	1.92	2.37	4.29	3	1st SW. 2nd NE.	Li. & Th. 2. Lightning 3.
Dec.	30.037	30.406	29.710	.696	62.25	69.5	56	13.5	67.5 64	55.51	.454	2.55	3.85	6.40	9	1st NW. 2nd NE. 3rd NE.	Th. & Lightning not observed.
June half Year.	30.113	30.381	29.810	.571	71.83	78.33	66.41	11.92	75.8	64.34	.607	11.42	16.41	27.83	19		
Year 1837	29.993	30.375	29.644	.731	63.54	71	54.6	16.3	66.9	57.7	.485	11.12	16.2	27.32	44		
Year 1837	30.053	30.378	29.727	.651	67.18	74.66	60.5	14.11	71.35	61.02	.542	22.54	32.61	55.15	63		

Horary Changes of Barometer.

Months.	No. of Observations.	9 A.M.	4 P.M.	Diff.	Times higher at 4 than at 9.	No. of Observations.	9 P.M.
July.	29	30·121	30·113	·008	10	28	30·126
August.	29	30·172	30·156	·016	6	25	·171
Sept.	26	30·185	30·153	·032	5	19	·171
Oct.	28	30·075	30·046	·029	4	18	·043
Nov.	29	30·192	30·157	·035	6	10	·048
Dec.	27	30·075	30·057	·018	8	16	·093
	168	30·137	30·113	·024	39	116	30·105
June Half year.	156	·057	·025	·029	27	108	·043
Whole year.	324	30·097	30·069	·027	66	224	30·074

Mem.—The observations at 9 a.m. and 4 p.m. were all taken on the same days; the number of times when higher at 4 than at 9 a.m. are included in those of column 2.

In August the barometer was lower at 5 p.m. ·013 than at 4 p.m. In September 4 p.m. gave the minimum, which continued so until near December, when 3 was at times lower than 4 p.m.

Nine a.m. was almost always higher than 8 or 10.

Winds.

Months.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
July.	4	2	1	6	6	45	3	26
August.	5	8	4	16	6	20	6	28
Sept.	4	24	6	21	6	23	1	5
Oct.	13	26	8	16	8	10	3	9
Nov.	8	23	6	10	6	27	3	7
Dec.	4	24	1	7	2	10	5	40
	38	107	26	76	34	135	21	115
June half year.	53	70	13	50	44	126	37	145
Whole year.	91	177	39	126	78	261	58	260

Observations on the year 1837.

	Not corrected.	Corrected and reduced to 32°.
Barometer highest on 15th Feb.	30·482	30·457
Wind SE., light. Therm. 56°		
Lowest 19th Jan. SE. heavy and suddenly changing to NW. Th. 61		
	29·394	29·339
	1·088	1·118
Mean height corrected	30·053	
Deduct mean of vapour	·542	
	29·511	
Mean heat ...	67·18	
Greatest	83·5	
Least	47·	

Observations on the last six months.

Solar heat (greatest on blackened bulb therm.)

July	Aug.	Sep.	Oct.	Nov.	Dec.
107°	115°	103°	98°	89°	88°

On the 14th of November an aurora borealis was seen between 6 and 7 p.m. centring on the north. Streamers extending towards the Pleiades, and converging towards Cassiopeia, never rising so high. Stars, except of first magnitude, not seen through it. Colour, except streamers, a deep red. At its close, about 7 p.m., a haze covered the whole space, and there was lightning in the SW. Barom. 30·024. Therm. 72°. Wind SW. fresh. During the appearance the gusts of wind were frequent and strong.

The barometer had been gradually falling from the 10th, when it was 30·400; at 4 p.m. of the 14th it was down to 29·998.

Bermuda, March 31st, 1838.

IV. *Experimental Researches on the Nature and Properties of Albumen, &c.* By GOLDING BIRD, M.D., F.L.S., G.S., &c.
*Lecturer on Experimental Philosophy at Guy's Hospital.**

IN my former papers on this subject†, I have given an account of some of the properties of free and combined albumen, chiefly in relation to carbonic acid and electric currents; and I hazarded a remark that these investigations would probably serve to point out the presence of albumen in certain

* Communicated by the Author.

† [See Lond. and Édinb. Phil. Mag. vol. ix, p. 109.]