

were discovered, which not only throw much new light on the early life and studies of our immortal countryman, but tend to refute the groundless rumours respecting a temporary derangement of his mind in 1692, and to exalt, in the highest degree, his moral and intellectual character.—*Morn. Chron.* June 27.

Lon. & Ed. Philos. Mag.

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*New Waggon Steam Drag.*

Mr. Boydell, of Dee Cottage, near Chester, has invented a locomotive engine, which, when fixed to heavy waggons, &c., will propel them on common roads at a very rapid rate. It was exhibited on Tuesday, and elicited the strongest approbation from many scientific and practical men who witnessed the trial, and minutely examined the machinery. It is applicable to ploughs, which it propels with great ease and velocity.

Chester Courant.—Mec. Mag.

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*Paris and Brussels Railway.*

The railway which has long been projected for uniting the capitals of France and Belgium, at length bids fair to be commenced in good earnest. The king of the French has just granted to Mr. John Cockerill, the celebrated English iron master of Leige, the "concession" of the railway for fifty years. The French government is to advance 25 per cent. of the cost, on the distance from Paris to the Belgian frontier; and Mr. Cockerill is to be entitled to all tolls and profits for the first half century, when, it is to be presumed, the works will become the property of the nation. The only condition with which the grant is accompanied, is, that the toll for the French portion of the railroad shall never exceed *fifteen francs, or 12s. 6d.* The terms of concession were not agreed to until after the "high contracting parties," Louis Philippe on one side, and Mr. Cockerill on the other, had had several personal interviews. The latter must be allowed to possess a most adventurous spirit; he was a severe sufferer by the revolution at Brussels in 1830; and yet, it seems, is not deterred from adventuring his capital on a soil like that of France, which in fifty years may experience, probably, half as many revolutions.

Mec. Mag.

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*The Thermo-electric Spark, obtained from a single pair of Metallic Elements.*

By MR. FRANCIS WATKINS.

With a pair of metallic elements, consisting of one bismuth and one antimony, weighing each five grains, and measuring 0.5 of an inch long, and 0.12 diameter, when their extremities were unequally heated, I have obtained, with a Henry's flat ribbon coil, a very perceptible and brilliant spark.

Now I have pen in hand, permit me to state that with thermo-piles I actuate most of the apparatus usually employed for illustrating electromagnetic phenomena, so that the public teacher may now show by the same apparatus the several rotations, &c., with thermo-electricity, as he does with voltaic electricity.

Lon. & Ed. Philos. Mag.

## Celestial Phenomena for March 1838.

LUNAR OCCULTATIONS FOR PHILADELPHIA, JANUARY 1838.					Angles reckoned to the right or westward round the circle, as seen in an inverting telescope. ☞ For direct vision add 180° ☞	
Day.	H'r.	Min.	Star's name.	Mag.	from Moon's North point.	from Moon's Vertex.
4	10	0	Im. of $\epsilon$ Aurigæ	,6,	64°	125°
4	11	16	Em.		272	333

## Meteorological Observations for October, 1837.

Moon.	Days.	Therm.		Barometer		Wind.		Water fallen in rain.	State of the weather, and Remarks.
		Sun rise.	2 P.M.	Sun rise.	2 P.M.	Direction.	Force.		
				Inches	Inches			Inches.	
	1	60°	69°	29.86	29.84	W.	Moderate.		Clear—do.
	2	54	71	29.95	29.90	W.	do.		Clear—lightly cloudy.
	3	55	64	29.96	30.00	W.	do.		Partially cloudy—do. do.
	4	46	54	30.10	30.10	W.	do.		Cloudy—clear.
	5	36	57	30.20	30.00	S.	Brisk.	.7	Clear—frost—cloudy—rain.
	6	52	56	29.80	29.80	N.	do.	.24	Partially cloudy—rain.
	7	40	58	29.95	29.97	N.	Moderate.		Clear—partially cloudy.
	8	45	54	29.97	30.10	N.E.	Brisk.		Partially cloudy—do. do.
	9	36	51	30.35	30.40	N.E.	do.		Partially cloudy—cloudy.
	10	46	64	30.26	30.14	N.E.	Moderate.		Cloudy—do.
	11	51	70	30.5	30.5	W.	do.		Clear—do.
	12	55	72	30.5	29.90	W.	Brisk.		Partially cloudy—do.
	13	42	44	29.80	30.5	N.E.N.W.	do.	.16	Rain—do.
	14	30	60	30.25	30.20	N.W.	do.		Clear—do.
	15	36	59	30.20	30.20	W.	Moderate.		Clear—do.
	16	50	62	30.10	30.15	W.N.W.	do.		Partially cloudy—do. do.
	17	45	64	30.31	30.22	W.	Calm.		Clear—cloudy.
	18	54	56	30.00	30.00	S.W.	do.		Cloudy—clear.
	19	57	70	29.80	29.00	W.E.	Moderate.		Clear—do.
	20	55	66	29.85	29.70	S.E.	Brisk.	.2	Cloudy—rain.
	21	48	58	29.66	29.95	W.	do.		Cloudy—do.
	22	44	63	30.5	30.5	N.E.S.W.	Moderate.		Partially cloudy—clear.
	23	50	75	29.95	29.90	W.S.	do.		Clear—do.
	24	55	76	29.90	29.85	W.	do.		Fog—clear.
	25	60	67	29.85	29.85	S.E.	do.		Fog—cloudy.
	26	56	59	29.84	29.83	E.	Brisk.		Cloudy—do.
	27	45	49	29.84	29.86	N.E.N.W.	do.		Rain—cloudy.
	28	36	50	29.95	29.95	W.	do.		Clear—cloudy.
	29	32	42	30.00	3.00	N.W.	Blustering.		Cloudy—clear.
	30	29	47	29.83	29.90	N.W.	Brisk.		Cloudy—cloudy.
	31	36	15	30.00	30.00	N.E.	Moderate.		Clear—do.
	Mean	46.43	59.93	29.90	29.99		.	.49	
Thermometer.									
Maximum height during the month				76.00	on 24th.			30.40	on 9th
Minimum				29.00	on 30th.			29.70	on 20th
Mean				53.19				29.99	