King's Cross Station, Great Northern Railway, is now lighted by means of electricity, a beginning having been made last week by means of the Crompton system. There are 12 Crompton lamps within the station, six being placed over the arrival, and a similar number over the departure platform. Two other lamps of larger size are placed outside the station building. The interior area lighted consists of two bays, each 880 feet long and 105 feet wide, and 72 feet high, as well as the cab-rank adjoining the arrival platform, which is 40 feet wide. The total area lighted is 220,000 square feet, giving an area of 18,133 square feet, or nearly half an acre, to each lamp. The lamps are suspended at a height of 30 feet from the platform level, and are arranged on four circuits, the light of each lamp being computed as equivalent to 4000 candles. Any unpleasantness from the intensity of the light is obviated by the use of semi-transparent glass in the lower portion of the lanterns. The two exterior lights are estimated at 6000 candles each, are placed at an altitude of 70 feet, the lanterns being of clear glass. The current is supplied by means of five Burgin dynamo-electric machines, which are driven by a semiportable engine by Messrs. Marshall, Sons & Co., of Gainsborough, working up to 35-horse power.

THE death of John Duncan, the Alford, England, botanist, is announced as having taken place last week in his 85th year. The deceased adopted the occupation of a weaver by trade, but devoted all his spare time to the study of botany. His splendid collection of plants he handed over to Aberdeen University a year ago, but he has lived barely six months to enjoy the fund which public recognition of his merits placed at his disposal in his declining years. The story of John Duncan's life is to be told by Mr. Jolly, himself an enthusiastic botanist.

Various attempts have been made to explain the tails of comets. A recent one by M. Picart is as follows: The Sun, the stars, nebulæ and comets, are composed not only of ponderable matter in the gaseous state, but of imponderable matter, the luminous ether, revealed, in the case of the sun by the zodiacal light, and in that of nebulæ, by their irregular forms contrary to gravitation. A comet far from the sun, appears in spheroidal form, due to gravitation of its ponderable matter (its luminous ether being then invisible because of distance and feeble light). But on nearing the sun, the luminous ether of this body repels that of the comet (this being a characteristic property of the ether) so forming the tail. The form and direction of the tail are thus quite independent of gravitation; and the enormous velocity ceases to be a difficulty, as it is if the matter of the tail be thought ponderable. M. Lamey has observed that the solar light, being unable completely to penetrate the comet's tail, illumines only the left part, producing a true cometary phase.

THE assimilation of nitrogen by plants has, of late, been carefully studied by Signor Lamattina, of Rome, who arrives at the following results: Plants absolutely require to assimilate nitrogen, and they obtain it in three forms: (1) In the nitrates of the ground; (2) In the ammonia of the air; (3) In the State of protoxide in the atmosphere. The nitrogen in the state of nitrates, absorbed by the roots, is for transport and diffusion of mineral substances, principally potash, in the leaves, helping to form chlorophyll and hydrocarbons. The nitrogen absorbed in the form of ammonia by respiration, serves for formation of albuminoids, fibrine, etc. The nitrogen absorbed in the state of protoxide, appears to serve as complement of the food of the plant, acting both as corrective, by neutralising the basis in excess, and helping in the formation of alkaloids.

METEOROLOGICAL REPORT FOR NEW YORK CITY FOR THE WEEK ENDING AUG. 27, 1881.

Latitude 40° 45′ 58″ N.; Longitude 73° 57′ 58″ W.; height of instruments above the ground, 53 feet; above the sea, 97 feet; by self-recording instruments.

AUGUST.	BAROMETER. MEAN FOR THE DAY. Reduced to Freezing.	BAROMETER. MAXIMUM. Reduced to Freezing.	BAROMETER. MAXIMUM. Time.	BAROMETER. MINIMUM. Reduced to Freezing.	BAROMETER. MINIMUM. Time.	THERMOMETERS. MEAN. Dry Bulb.	THERMOMETERS. MEAN. Wet Bulb.	THERMOMETERS. MAXIMUM. Dry Bulb.	THERMOMETERS. MAXIMUM. Time.	THERMOMETERS. MAXIMUM. Wet Bulb.	THERMOMETERS. MAXIMUM. Time.	THERMOMETERS. MINIMUM. Dry Bulb.	THERMOMETERS. MINIMUM. Time.	THERMOMETERS. MINIMUM. Wet Bulb.	THERMOMETERS. MINIMUM. Time.	MAXI'M In Sun.
Sunday, 21	29.628	29.678	12 p. m.	29.598	5 p. m.	77.0	69.0	85	5 p. m.	73	5 p. m.	68	5 a. m.	65	5 a. m.	144.
Monday, 22	29.802	29.896	12 p. m.	29.678	0 a. m.	74.0	66.0	81	3 p. m.	69	2 p. m.	67	12 p. m.	62	12 p. m.	139.
Tuesday, 23	29.979	30.046	12 p. m.	29.896	0 a. m.	72.3	64.0	83	5 p. m.	69	2 p. m.	61	6 a. m.	59	6 a. m.	140.
Wednesday, 24	30.138	30.196	12 p. m.	30 046	0 a. m.	73.3	66.6	82	2 p. m.	73	2 p m.	63	5 a. m.	60	6 a. m.	141.
Thursday, 25	30.200	30.212	9 a. m.	30.168	6 p. m.	70.3	64.6	76	3 p. m.	67	3 p. m.	65	3 a. m.	62	3 a. m.	131.
Friday, 26	30.151	30.198	0 a. m.	30.110	4 p. m.	71.7	67.0	82	3 p. m.	73	3 p. m.	63	7 a. m.	62	8 a. m.	134.
Saturday, 27	30.114	30.156	9 a. m.	30.072	6 p. m.	72.0	66.7	78	2 p. m.	70	2 p. m.	66	6 a. m.	64	6 a. m.	128.

			Dry.	Wet.
Mean for the week	30.002 inches.	Mean for the week	72.9 degrees	66.2 degrees.
Maximum for the week at 9 a. m., August 25th	30.212 "	Maximum for the week, at 5 pm. 21st	85. "	at 5 pm 21st, 73. "
Minimum " at 5 p. m., August 21st	29.598 "	Minimum " " 6 am. 23d	61. "	at 6 am 23d, 59. "
Range	.614 "	Range " "	24. "	14. "

AUGUST.	WIND. DIRECTION. 7 a. m.	2 p. m.	9 p. m.	VELOCITY IN MILES. Distance for the Day.	FORCE IN LBS. PER SQR. FEET. Max.	Time.	HYGROMETER. FORCE OF VAPOR. 7 a. m.	2 p. m.	9 p. m.	RELATIVE HUMIDITY. 7 a. m.	2 p. m.	9 p. m.	CLOUDS. CLEAR, 0 OVERCAST. 10 7 a. m	2 p. m.	9 p. m.	RAIN AND SNOW. DEPTH OF RAIN AND SNOW IN INCHES. Time of Beginning.	Time of Ending.	Duration. h. m.	Amount of water	OZONE.
Sunday, 21	n.	n. n. e.	w. n.w.	123	3¼	11 am	.537	.623	.652	71	53	73	3cir.cu.s	3 cu. s.	10	11 p m	11½ p m	0.30	.01	3
Monday, 22	n. w.	n. w.	n. n. w.	153	3	3.30 pm	.516	.547	.537	70	52	71	0	3 cu.	0	-----	-----	-----	--	7
Tuesday, 23	n. w.	n. w.	n. n. w.	155	2¼	4.40 pm	.433	.547	.489	72	52	62	0	3 cu.	0	-----	-----	-----	--	1
Wednesday, 24	n. n. e.	n. e.	s. e.	121	4	1.30 pm	.462	.663	.564	65	63	79	0	1 cir. cu.	0	-----	-----	-----	--	0
Thursday, 25	s. s. e.	s.	s. s. w.	140	2¼	3.20 pm	.509	.554	.543	74	64	79	8 cu.	0	0	-----	-----	-----	--	0
Friday, 26	w. s. w.	s.	s. s. w.	150	2	3.00 pm	.576	.624	.608	100	59	80	10	1 cu.	0	-----	-----	-----	--	0
Saturday, 27	s. w.	s.	s. s. w.	140	2	4.40 pm	.543	.625	.586	79	65	80	8 cu.	1 cu.	0	-----	-----	-----	--	0

Distance traveled during the week	982	miles.	Total amount of water for the week	.01 inch.
Maximum force	4	lbs.	Duration of rain	00 hours, 30 minutes.

DANIEL DRAPER, Ph. D.
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