cieties; the London Astronomical, Meteorological, and Geological Societies; the Essex Institute; Hartford Asylum; American Journal of Arts and Sciences; Rensselaer Polytechnic Institute; Prof. Winchell; Franklin Institute; and Medical News of Philadelphia.

The Proceedings of the Board and Council were read.

Pending nominations Nos. 550, 551, 552, 553 and 554, were read.

And the Society was adjourned.

Stated Meeting, September 21, 1866.

Present, ten members.

Vice-President Prof. CRESSON in the Chair.

The printed circular of the Officers and Committee of the Portland Natural History Society, appealing for aid, was read.

A letter was received from Mr. Wm. Duane, 514 Walnut Street, September 20th, presenting to the Library of the Society, four MS. volumes of a Journal kept by the late Mr. Peter Legaux, superintendent of the Vineyard at Spring Mill, Montgomery County, Pennsylvania, between the years 1803 and 1827. The gift was made under the belief that the meteorological records contained therein are of value.

Letters of envoi were received from the Geographical Society of St. Petersburg, July 25th; the University at Lund, November, 1865; the Verein fur Erdkunde zu Dresden, May 16th; the Provincial Secretary of Canada at Ottawa, August 31st; and the Boston Society of Natural History, September 17th, 1866.

On motion ordered that the Verein fur Erdkunde zu Dresden, be added to the list of corresponding Societies to receive the Proceedings.

Donations for the Library were received from various sources as follows: the Royal, Danish, Russian, Austrian, Turin, and Dublin Societies; the University of Lund; the Observatory at Turin; the Geographical Societies at St. Petersburg, Dresden, Paris, and London; the Geological Societies at Vienna, Berlin, and Leeds; the Zoologico-Botanical Societies at Vienna, Berlin, and Frankfort-am-Maine; the Natural History Societies at Bremen, Bonn, and Boston; the Academy of Natural Sciences, Philadelphia; the Geological Survey of Canada; American Journal of Sciences; Cooper Union; Historical Magazine at Morrisiana; the Medical News; J. A. Meigs, M. Carey Lea, and Wm. Duane, of Philadelphia; Dr. Steiner, of Baltimore; Prof. Dana, of New Haven; Dr. Schinz, of Strasbourg; M. des Moulines, and M. Trimoulet, of Bordeaux; Mr. Alex. Winchell, of Ann Arbor; and the California Academy.

The decease of a member, Mr. Matthias W. Baldwin, in Philadelphia, on the 7th inst., was announced by Mr. Fraley. On motion, Mr. Franklin Peale was appointed to prepare an obituary notice of the deceased.

The decease of another member, Dr. A. A. Gould, at Boston, Massachusetts, on the 17th inst., aged 57, was announced by Mr. T. P. James.

Prof. H. C. Wood offered for publication in the Transactions, a paper entitled "A Contribution to the Knowledge of the Flora of the Coal Period of the United States," which, on motion, was referred to a committee consisting of Mr. Lesquereux, Mr. T. P. James, and Mr. Lesley.

Mr. P. E. Chase read a communication "On the Relations of Temperature to Gravity and Density:"

It has long been known that the temperature of the air is, to some extent, dependent upon its gravity and density. Among the prominent indications of this dependence are:

1. The diminution of temperature upon mountains and in balloon ascents.

2. The equation of oscillation ($v = \sqrt{2\,gh}$), which applies to all undulations, whether of heat, light, electricity, or material bodies.

3. The inverse relations of specific gravity and atmospheric density to temperature, and the direct relation of density to pressure.

4. The observed proportionality of the heat generated by collision, to the square of the obstructed velocity, in falling bodies as well as in projectiles.

5. The relations which have been pointed out between magnetism and heat,—between magnetism and the solar spots,—between the sun-spots and gravity,*—and between magnetism and gravity.

6. The general theoretical proportionality of radiative to absorptive power, and the practical confirmation of theory by Tyndall's recent experiments.

7. The variation of heat, gravity, and other central forces, in the inverse ratio of the square of the distance, and the reasonable presumption of an identity of mechanical laws from the identity of the "lines of force" in centripetal and centrifugal radiation.

The average daily extremes of temperature, from the absorption of solar heat and the cooling by nocturnal radiation, occur at about 5^h A.M. and 2^h P.M. The atmospheric gravity, in consequence of the combined attraction of the sun and earth, is greatest at midnight and least at noon. The temperature- and weight-disturbances do not, therefore, correspond in their daily march, but by averaging on each side of the turning-points (so as to eliminate, as far as practicable, the overlying perturbations of the heat which is alternately stored and restored), we may discover some indications of a constant ratio between the radiating and attractive energies of the sun. If such a ratio really exists, and yet cannot be exactly determined, the nearest attainable approximation to its value will be an interesting, and, perhaps, a useful addition to our knowledge of molecular physics.

The "interior work" or latent heat that balances the condensation of gravity, is greatest at midnight, when the solar attraction is added to the terrestrial, and least at noon, when the weight of the air is represented by the difference of the two attractions. It seems probable, therefore, inasmuch as the gravitation of a particle towards the sun is .00067 as great as that towards the earth's centre, and as a variation of 180° F. in temperature is accompanied by a variation of .367 in volume, that there should be, from this cause alone, an in-

* Wolff's sun-spot formula is based on the masses, distances, and annual motions of Jupiter, Saturn, the Earth, and Venus.

crease in temperature, under a vertical sun at noon, of $180° \times .00067 \div .367 = 0°.3286$, and a like decrease at midnight. This amount of disturbance is entirely independent of the heat-waves which are radiated from the sun, and it would, therefore, remain unchanged, even if the sun were darkened or an adiathermanous screen were interposed.

If the hypothesis of a constant ratio between the solar attraction and the solar radiation is correct, the average temperature at different hours of the day, like the weight-disturbance, should vary nearly as the cosine of the hour-angle. In Table I, the stations are arranged, in each quarter of the globe, in the order of latitude, and one hour is allowed for the lagging which is due to atmospheric inertia,* the differences being taken between 1^h and 13^h, 2^h and 12^h, &c., instead of between 0^h and 12^h, 1^h and 11^h, &c. The striking theoretical correspondence in the average of the joint observations at Göttingen and Halle, is specially interesting on account of the position of the two stations, south of the Hartz Mountains, and near the opposite extremities of the range. The New Haven ratios, which are deduced from the discussion, by Profs. Loomis and Newton, of 86 years' observations, approximate more nearly to the cosine ratios than those which are based on a shorter series of observations at most other American stations. The Amherst ratios, however, representing a single year's observations under the direction of Prof. Snell, are very noticeable for their close coincidence with theory. At nearly all the stations the abnormal differences are greatest when the sun is near the horizon, which may be partly owing to the greater extent of air traversed by the solar rays.

The force of gravity at the poles is $1^2 - (\frac{299}{300})^2 = \frac{1}{150}$ greater than at the equator. The amount of heat required to expand air $\frac{1}{150}$ of its volume is $180° \times \frac{1}{150} \div .367 = 3°.27$. According to Johnston's Physical Atlas, the mean minimum temperature of the globe is 1°.75, the maximum 85°.3, which indicates an average difference of 83°.55 between the polar and equatorial temperatures. Daguin (Traité de Physique, v. 2, p. 115) fixes the range at 46°.2 C., or 83°.16 F.

Table II exhibits the average daily range, at all the stations of hourly observation which are embraced in the third edition of Guyot's Tables.

* The approximate average lagging, as shown by a great variety of barometric observations, is about 50 minutes.

Tables III and IV are constructed from Prof. Coffin's reductions of the extensive meteorological observations made under the direction of the United States Patent Office and the Smithsonian Institution.

Table V presents various comparisons between the thermal dis-

Table I.—Ratios of Average Daily Fluctuations of Temperature.

Hours of Observation, . . .	1 / 13	0—14 / 2—12	23—15 / 3—11	22—16 / 4—10	21—17 / 5—9	20—18 / 6—8
Hour Angle, ...	0°	15°	30°	45°	60°	75°
Cosine of Hour Angle, . . .	1.	.966	.866	.707	.500	.259
Average Temperature Ratios.						
Philadelphia,[f 2] . . .	1.	.984	.912	.795	.612	.347
Do.[f 3] . . .	1.	.980	.912	.796	.610	.349
Do.[d] . . .	1.	.969	.920	.808	.615	.338
Frankford,[f 4–5] . . .	1.	.983	.933	.824	.631	.338
New Haven,[e] . . .	1.	.978	.905	.775	.567	.302
Amherst,[f 51]	1.	.964	.859	.703	.504	.257
Toronto,[a]	1.	.978	.927	.823	.655	.363
Do.[f 6–7]	1.	.989	.950	.842	.644	.351
Do.[f 8]	1.	.987	.920	.819	.653	.365
Sitka,[f 11]	1.	.979	.879	.719	.554	.288
Boothia Felix,[f 12] . .	1.	.956	.840	.668	.461	.234
Rio Janeiro,[f 16–17] . .	1.	.976	.917	.786	.586	.314
Trevandrum,[f 18–19] . .	1.	.973	.896	.755	.551	.293
Madras,[f 20–24] . . .	1.	.981	.883	.744	.547	.315
Bombay,[f 22–23] . . .	1.	.980	.919	.774	.575	.307
Do.[f 25]	1.	.989	.915	.789	.594	.345
Calcutta,[f 26]	1.	.981	.883	.717	.536	.272
Peking,[f 28]	1.	.975	.877	.752	.551	.289
Tiflis,[f 27]	1.	.965	.882	.739	.537	.279
Nertchinsk,[f 29] . . .	1.	.971	.886	.748	.549	.286
Do.[f 30]	1.	.984	.906	.764	.567	.299
Barnaul,[f 31–32] . . .	1.	.971	.887	.743	.537	.299
Do.[f 33]	1.	.974	.889	.740	.532	.271
Rome,[f 34]	1.	.988	.935	.816	.614	.334
Padua,[f 35]	1.	.987	.916	.784	.595	.293
Do.[c]	1.	.987	.909	.784	.594	.294
St. Bernard,[f 38] . . .	1.	.968	.867	.706	.501	.259
Geneva,[f 36]	1.	.970	.880	.731	.527	.275
Salzburg,[f 41]	1.	.977	.888	.746	.543	.292
Kremsmünster,[f 40] . .	1.	.965	.868	.745	.503	.262
Munich,[f 42]	1.	.972	.894	.761	.562	.311
Prague,[f 43]	1.	.970	.895	.751	.553	.317
Do.[f 44]	1.	.963	.867	.706	.469	.243

[a] Sabine. [c] Kaemtz. [e] Loomis.
[b] Blodgett. [d] Bache, 1842–4. [f] Guyot.

turbances which are set forth in the previous tables, and contemporaneous disturbances of gravity or density. It exhibits a satisfactory degree of uniformity in the variously derived results, considering the limited extent of the observations, the usual crudity of first approximations in science, and the amount of disturbance that must necessarily arise from atmospheric currents. The ratios, whether

TABLE I.—*Continued.*

	Hours of Observation,	1 13	0—14 2—12	23—15 3—11	22—16 4—10	21—17 5— 9	20—18 6— 8
	Hour Angle,	0°	15°	30°	45°	60°	75°
	Cosine of Hour Angle,	1.	.966	.866	.707	.500	.259
Average Temperature Ratios.	Plymouth,[f 45–46]	1.	.973	.891	.744	.542	.281
	Brussels,[f 47]	1.	.972	.896	.759	.554	.294
	Mühlhausen,[f 50]	1.	.984	.889	.730	.523	.276
	Greenwich,[f 53]	1.	.964	.863	.705	.496	.257
	Do.[f 54]	1.	.979	.874	.721	.521	.279
	Do.[b]	1.	.974	.879	.726	.521	.268
	Halle,[f 55]	1.	.959	.849	.679	.470	.205
	Do.[c]	1.	.964	.856	.689	.475	.238
	Göttingen,[f 56]	1.	.974	.887	.732	.529	.270
	Do.[c]	1.	.976	.888	.732	.530	.278
	Halle and Göttingen,[f]	1.	.966	.869	.716	.500	.240
	Do.[c]	1.	.971	.873	.712	.504	.259
	Utrecht,[f 51]	1.	.966	.879	.749	.557	.290
	Salzuflen,[f 58]	1.	.991	.910	.786	.580	.310
	Berlin,[f 57]	1.	.964	.889	.743	.540	.280
	Stettin,[f 59]	1.	.963	.918	.756	.535	.290
	Apenrade,[f 60]	1.	.961	.866	.727	.525	.274
	Makerstoun,[f 63]	1.	.965	.879	.727	.515	.262
	Leith,[f 61–62, c]	1.	.988	.901	.756	.572	.316
	Catharinenburg,[f 65]	1.	.974	.893	.751	.544	.318
	Do.[f 66]	1.	.977	.898	.752	.543	.282
	Christiania,[f 71]	1.	.972	.886	.748	.521	.274
	St. Petersburg,[f 67]	1.	.954	.884	.762	.562	.285
	Do.[f 69]	1.	.969	.935	.816	.626	.336
	Helsingfors,[f 68]	1.	.968	.872	.718	.514	.262
	Do.[f 70]	1.	.980	.891	.750	.546	.289
	Drontheim,[f 72]	1.	.942	.815	.651	.439	.222
	Strait of Kara,[f 73]	1.	.969	.871	.707	.502	.261
	Novaia Zemlia,[f 74]	1.	.958	.835	.655	.442	.226
	St. Helena,[f 76]	1.	.952	.852	.693	.465	.229
	Do.[a]	1.	.967	.852	.678	.460	.207
	C. of Good Hope,[f 77]	1.	.948	.870	.732	.527	.264
	Hobarton,[f 78, a]	1.	.965	.870	.724	.520	.267

[a] Sabine. [c] Kaemtz. [e] Loomis.
[b] Blodgett. [d] Bache, 1842–4. [f] Guyot.

determined (1) by the gravitation disturbance, from the mean of the thermometric extreme daily ranges (28 925), from the mean of the observed ranges on land and at sea (25.015), from the differences between the polar and equatorial mean temperatures according to Johnston (25.55), or Daguin (25.431), or from the annual range (31.04),—or (2) by the barometric disturbance, from the intersolstitial range (33.823), indicate an action on the atmosphere by the sun's radiating energy, which is more than twenty-five times as great as that which is due to simple solar attraction. The annual and intersolstitial ranges involve periods of such length that the differences of temperature may, perhaps, be more influenced by the earth's centrifugal force than by the mere difference of gravity. If the centrifugal force $(\frac{1}{194})$ is substituted for the difference of gravity

Table II.—Average Daily Range of the Thermometer.

Guyot's Table.	Station.	Lat.	Range.	Guyot's Table.	Station.	Lat.	Range.
		° ′	°			° ′	°
1	Washington, .	38 54	13.63	43	Prague, . . .	50 5	9.52
3	Philadelphia, .	39 58	12.34	44	" . . .	" "	8.62
5	Frankford, . .	39 57	14.29	45	Plymouth, . .	50 22	8.62
6	Toronto, . . .	43 40	11.53	47	Brussels, . . .	50 51	9.67
8	" . . .	" "	11.25	50	Mühlhausen, .	51 13	10.78
9	" . . .	" "	11.41	51	Utrecht, . . .	52 5	8.66
10	Montreal, . .	45 30	11.07	53	Greenwich, . .	51 29	10.19
11	Sitka, ...	57 3	7.31	54	" . .	" "	10.60
12	Boothia Felix, .	69 59	5.90	55	Halle, ...	51 30	11.20
16	Rio Janeiro, .	22 54	5.85	56	Göttingen, . .	51 32	12.53
5'	Amherst, . . .	42 22	14.61	57	Berlin, . . .	52 30	10.24
18	Trevandrum, .	8 31	11.97	58	Salzuflen, . .	52 5	9.07
20	Madras, . . .	13 4	9.54	59	Stettin, . . .	53 25	9.61
22	Bombay, . . .	18 56	5.49	60	Apenrade, . .	55 3	8.73
25	" . . .	" "	9.70	61	Leith, ...	55 59	6.13
26	Calcutta, . . .	22 33	11.47	63	Makerstoun, .	55 36	9.31
27	Tiflis, ...	41 41	12.98	65	Catharinenburg,	56 50	11.34
28	Peking, . . .	39 54	14.98	66	"	" "	11.56
29	Nertchinsk, . .	51 18	15.41	67	St. Petersburg, .	59 56	7.29
31	Barnaul, . . .	53 20	14.13	68	Helsingfors, . .	60 10	7.29
33	" . . .	" "	15.46	69	St. Petersburg, .	59 56	7.96
34	Rome, ...	41 54	14.15	70	Helsingfors, . .	60 10	9.34
35	Padua, . . .	45 24	10.26	71	Christiania, . .	59 55	8.41
36	Geneva, . . .	46 12	11.72	72	Drontheim, . .	63 26	7.99
38	St. Bernard, . .	45 52	8.41	73	St. of Kara, . .	70 37	4.79
40	Kremsmünster, .	48 3	8 73	74	Nov. Zemlia, .	73	3.55
41	Salzburg, . . .	47 48	9.83	76	St. Helena, . .	15 55	5.56
42	Munich, . . .	48 9	12.53	77	C. of Good Hope,	33 56	9.61
				78	Hobarton, . .	42 53	12.35

($\frac{1}{150}$) in calculating the last two of the above ratios, they approximate more nearly to the other four ($31.04 \times \frac{1}{134} \div \frac{1}{150} = 24$; $33.823 \times \frac{1}{194} \div \frac{1}{150} = 26.17$).

The final ratios of the table show that the thermometric intersolstitial range bears nearly the same proportion to the daily land range, as the annual range of temperature bears to the temperature-variation which corresponds to the annual barometric range.

The observations at St. Bernard show a remarkable tabular correspondence, both in the parallelism between the daily temperature-variations and the cosines of the hour-angles (Table I), and in the approximation of the daily thermometric range (Table II) to the mean of the land and maritime ranges (Table V). The general average of Table I, viz.:

0°	15°	30°	45°	60°	75°
1.	.972	.888	.745	.543	.286

exhibits the greatest difference from the cosine ratios at the hour-angle of 75°, when the observed excess is $\frac{27}{259}$ or 10.4 per cent. The greatest local difference ($\frac{365-259}{259} = 40.92$ per cent.) is shown at Toronto, at the same hour-angle.

Many physicists have supposed that heat and attraction are but opposite phases of a single force, and the hydrodynamic researches

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Table III.—Average North American Annual Range.

Year.	Barometer.			Thermometer.	
	No. of Obs.	Aggregate of Means.	Aggregate Range.	No. of Obs.	Aggregate Range.
					°
1854	53	1568.20	81.42	92	9159.0
1855	65	1923.50	105.71	101	10179.0
1856	71	2097.91	104.02	124	13136.1
1857	89	2632.32	146.92	153	16296.5
1858	103	3038.43	141.45	180	17193.5
1859	113	3319.29	170.11	190	19265.4
Total, . .	494	14579.65	749.63	840	85229.5
Average,	. .	. 29.51	. 1.52	. . . .	. 101.5

$$\frac{\text{Av. Bar. Range}}{\text{Av. Bar. Height}} \times \frac{180°}{.367} = 25°.217$$

$$101°.5 \div 25°.217 = 4.024$$

of Challis, Rankine, and Helmholtz may be so interpreted as to corroborate such a hypothesis. I am not aware, however, that any one has hitherto attempted to verify the theory by observation, or to point out any path by which cosmical tests may be attainable.

I do not feel that the tests which I have here submitted are well-defined enough to warrant any present attempt at a complete mechanical interpretation of the ratios to which they lead. But in any future mathematical or empirical investigations on the subject, it may be well to keep in view the following propositions:

1. The motions of every particle of the earth's atmosphere are controlled, mainly, by the tendency to equilibrium between the solar and terrestrial attractions.

2. The undulations (of light, heat, etc.) which radiate from the surface of the solar photosphere, originate at a point where the sun's attractive energy is $[354936 \div (\frac{441000}{3956})^2 =]$ 28.56 times as great as the earth's superficial attraction.

3. If two equal material particles are kept asunder by an inter-

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Table IV.—Average North American Intersolstitial Range.

Year.	Barometer.				Thermometer.			
	January.		July.		January.		July.	
	No. of Obs.	Aggregate of Means.	No. of Obs.	Aggregate of Means.	No. of Obs.	Aggregate of Means.	No. of Obs.	Aggregate of Means.
1854	96	2839.64	90	2659.62	167	4792°.13	165	12763°.68
1855	94	2781.54	84	2482.51	163	5274 .50	148	11058 .97
1856	110	3252.21	115	3391.54	204	4148 .06	214	16167 .26
1857	138	4090.17	132	3891.22	263	5292 .25	248	18159 .83
1858	156	4605.17	151	4444.47	299	10932 .11	264	19744 .50
1859	162	4767.27	149	4372.35	281	8830 .58	268	20957 .50
Total,	756	22336.00	721	21241.71	1377	39269°.63	1307	98851°.74
Av. heights,	.	29.54		29.46		28.52		75.63

$$\frac{\text{Av. Bar. Range}}{\text{Av. Bar. Height}} \times \frac{180°}{.367} = 1°.393$$

(Av. Ther. Range) 47°.115 ÷ 1°.393 = 33.823

posed elastic medium, the attractive force of each particle, at the centre of elasticity, is four times as great as the mutual attraction of the particles for each other.

4. The velocity of light is nearly the same as the velocity which would be acquired in one year by a falling body, under the influence of an accelerating force equivalent to the force of gravitation at the earth's surface ($32\frac{1}{6} \times 86400 \times 365\frac{1}{4} \div 5280 = 192254$ miles per second). This is perhaps merely a curious accidental coincidence.

5. There is probably a daily flow of the expanded air, at noon, over the cooler and denser air, eastwardly and westwardly. Some physicists have thought that this overflow is sufficient to account for the daily barometric tides.

6. The $\left\{\begin{array}{c}\text{momentum}\\ \text{moment of inertia}\end{array}\right\}$ of the atmosphere, in the direction of its orbital motion, is about $\left\{\begin{array}{c}66\\ 529000000\end{array}\right\}$ times as great as that which is due to the earth's daily rotation.

Table V.—Ratios of Temperature-Variations to Variations in Gravity or Specific Gravity.

Observed Averages.		Divisor.	Ratio.
Lowest Daily Range, T. II, ...	3°.55	0°.3286[a]	10.803
Highest " " "	15 .46	0 .3286	47.048
Mean, "	9 .50	0 .3286	28.925
Daily Land Range, "	10 .86	0 .3286	33.049
" Maritime Range, "	5 .58	0 .3286	16.981
Mean, "	8 .22	0 .3286	25.015
Polar-Equatorial Diff. J., ...	83 .55	3 .27[b]	25.55
" " " D., ...	83 .16	3 .27	25.431
Annual Range, T. III, ...	101 .5	3 .27	31.04
Intersolstitial Range, T. IV, ...	47 .115	1 .393[c]	33.823
" " " "	47 .115	10 .86[d]	4.338
Annual Range, T. III, ...	101 .5	25 .217[e]	4.025

[a] Variation of temperature corresponding to the variation of atmospheric volume which is due to solar attraction.

[b] Temperature-variation corresponding to the difference between the polar and equatorial attractions

[c] Temperature-variation corresponding to the barometric intersolstitial variation.

[d] Average daily land range of temperature.

[e] Temperature-variation corresponding to barometric annual range.

Prof. Cresson communicated a note upon a copper coin in the possession of Mr. M. Moore, of Trenton Falls, dated July 24th, 1866, viz.:

There came into my hands last week, a small copper coin of the weight of forty-two grains, in fine condition, very much like in appearance to the quarter-eagle of 1798, figured in Dickeson's Manual. Around the head of Liberty, is twelve stars, on the right of the date 1803, is in very minute letters the word KETTLE, two stars being displaced for its insertion; the word Liberty is not directly over the head, but on the right. I think it a trial piece of the quarter eagle of 1803.

Mr. Jacob R. Telfair, of the city of New York gave it to me; his little son had found it in his father's garden at Washington Heights near New York.

Mr. Lesley communicated extracts from a letter to him from Mr. William Köhler, dated Austinville, Wythe County, Va., June 12th, 1866, as follows:

Some years ago in your report of the Lead Ores at this mine, you wrote that they are found in an anticlinal formation, which, however, was not easy to make out. This we have verified in the last few years, by driving a new tunnel from the northeastern end of the hill (from the flat on the river) southwestward, striking the ore and going through it. We then had a rock pitching towards us and a lead of ore on each side. That on the left dipping southeast, and that on the right northwest. We first drove on the lead dipping southeast; we left the ore standing over us. Then also the lead dipping northwest. Both continue after driving for several hundred feet on them. Taking out the mass of ore over these drifts we found that they connected above. We left open a gangway *over the anticlinal axis* from the southeast dipping lead to the northwest. I thought it would be gratifying to you, to know this, as your views were quite the contrary of the Professors Rogers, who thought we had regular veins (thrown up from below) there. I am, etc.,

Wm. Köhler.

Prof. Cresson described the appearance of curious lunar rings observed by him at Pottsville and other places on the 27th July, 1866.

Pending nominations Nos. 550 to 555, and new nomination 556, were read.

And the Society was adjourned.