

out, and which stretch for a space of 400 miles along the parallel of  $32^{\circ}$  north latitude, in the valley of the Gila river and near the meridian of  $111^{\circ}$  west longitude, is the Maricopa copper mine discovered by Col. A. B. Gray. It is a wide vein of the grey sulphuret of copper, and promises to be a mine of great importance; while all along the valley of the Gila are said to be deposits of gold-bearing quartz.

The specimens of ore exhibited to the Society were mainly from the Santa Rita and the Mimbres mines. They consisted of steel grained galena from the Crystal mine, Fahl ores from the Gila, the Buena Ventura, the Tajito mines; sulphuret of silver and copper from the Heintzelman mine; galena from the Bustillo mine; sulphuret and carbonate of copper and native copper from the Mimbres mines, and native gold and gold-bearing rock and dirt from the San José mine.

The attention of the Society was called to the commercial wants of Arizona, and the feasibility of a railroad route from Guamas or Port Lobos, on the Gulf of California, to Tubac, and thence by the route of the  $32^{\text{d}}$  parallel to the Rio Grande. The distance of Lobos to Tubac is 160 miles, over a route that is moderately level, presenting easy gradients and curves. The business to be done by such a road would be the transportation of ores and metals to the coast and return freight of provisions and merchandise to the mines.

The surface of the country is mostly gently rolling swells, the mountains rising abruptly and precipitously in small detached ranges rather than in continuous chains, thus affording an opportunity of winding around their bases. The prevailing rock is trap, and the soil hard gravel. In the absence of a railroad, it was thought wagons propelled by steam could be successfully adopted, the roads possessing all the requisites of hard surface, gentle ascents, and long stretches of straight lines.

---

## METEOROLOGY.

---

For the Journal of the Franklin Institute.

*The Meteorology of Philadelphia.* By JAMES A. KIRKPATRICK, A.M.

JANUARY.—It will be seen by the accompanying table, that during the month of January of this year, the wind was more northerly than usual; the temperature and the force of vapor were lower, while the pressure of the atmosphere, the relative humidity, the amount of rain, and the number of rainy days were greater than usual.

The warmest day of the month was the 7th, of which the mean temperature was  $41.7^{\circ}$ , but the highest temperature ( $49\frac{1}{2}^{\circ}$ ) was reached on the 19th. The coldest day was the 13th, when the temperature fell to  $1^{\circ}$ , the mean for the day being  $7.8^{\circ}$ . It is said that in the western part of the city, about five miles west of the Schuylkill, the mercury fell to 6 degrees below zero on the morning of the 13th. The range for the month was  $48\frac{1}{2}^{\circ}$ .

The temperature was below the freezing point on 23 days of the month, though it rose above that point in the afternoon of every day

except six, namely, from the 11th to the 14th inclusive, and on the 23d and 31st.

The changes of temperature were less than usual for January, the mean daily range being less than six degrees, the average for ten years being a little more than six and three-quarters. The daily oscillation of temperature was three degrees less than in January, 1860, though it was only about a quarter of a degree less than the average for the month for ten years.

The pressure of the atmosphere was greatest (30.526 inches) on the morning of the 23d, and least (29.460) on the afternoon of the 16th; range for the month, 1.066 inches. The mean daily range, or average of changes in pressure, was considerably—that is, two-hundredths of an inch—more than usual, and eight-hundredths of an inch more than in the same month of last year.

Snow fell on eight days of the month, to the aggregate depth of about twelve inches. Between 9 and 10 A. M. of the 24th, the flakes of snow falling were very large, many of them being two inches in diameter, and so close to each other that for some time it was impossible to distinguish objects at the distance of one hundred yards.

There were nine days on which the sky was entirely covered with clouds, and four days clear or free from clouds at the hours of observation.

*A Comparison of some of the Meteorological Phenomena of JANUARY, 1861, with those of January, 1860, and of the same month for ten years, at Philadelphia.*

	Jan., 1861.	Jan., 1860.	Jan., 10 years.
Thermometer.—Highest, . . .	49.5°	58.0°	62.0°
“ Lowest, . . .	1.0	3.5	—5.5
“ Daily oscillation, . . .	11.61	14.80	11.83
“ Mean daily range, . . .	5.98	6.50	6.78
“ Means at 7 A. M., . . .	27.67	28.89	27.29
“ “ 2 P. M., . . .	34.34	38.37	35.09
“ “ 9 P. M., . . .	30.90	32.97	30.81
“ “ for the month, . . .	30.97	33.41	31.06
Barometer.—Highest, . . .	30.526 in.	30.399 in.	30.704 in.
“ Lowest, . . .	29.460	29.593	28.941
“ Mean daily range, . . .	.229	.159	.208
“ Means at 7 A. M., . . .	29.991	29.970	29.979
“ “ 2 P. M., . . .	29.953	29.915	29.941
“ “ 9 P. M., . . .	29.968	29.938	29.965
“ “ for the month, . . .	29.971	29.941	29.962
Force of Vapor.—Means at 7 A. M.,	.128 in.	.136 in.	.133 in.
“ “ “ 2 P. M.,	.144	.144	.153
“ “ “ 9 P. M.,	.145	.143	.146
Relative Humidity.—Means at 7 A. M.,	80 per ct.	80 per ct.	80 per ct.
“ “ “ 2 P. M.,	72	61	69
“ “ “ 9 P. M.,	81	73	77
Rain and melted snow, . . .	4.620 in.	3.351 in	3.101 in.
No. of days on which rain or snow fell	13	8	10
Prevailing winds, . . .	N. 52° 12' W. 375	N. 89° 9' W. 402	N. 63° 57' W. 343



