FEBRUARY 22d 1732.

Bright natal morn! what face appears
Beyond the rolling mist of years?—
A face whose loftiest traits combine
All virtues of a stainless line
  Passed from leal sire to loyal son;
The face of him whose steadfast zeal
  Drew harmonies of law and right
  From chaos and anarchic night;
  Who, with a power serene as fate's,
  Wrought from rude hordes of turbulent States
The grandeur of our commonweal;—
  All hail! all hail! to Washington!

Freedom he wooed in such brave guise,
Men gazing in her luminous eyes
Beheld all heaven reflected shine
Far down those sapphire orbs divine;
  And worshiped her so chastely won;
If still she panted, fresh from strife,
  And blood-stains flecked her garment's rim,
  They could not make its whiteness dim;
  For, shed by hearts sublimely true,
  Such drops are changed to sacred dew—
The chrism of patriot light and life—
  Baptizing first our Washington.

For cloudless years, benignant still,
This Freedom worked her bounteous will—
Mingling with homespun man and maid,
Her pale cheek caught a browner shade
  In fields where harvest toils were done;
She veiled in part her goddess-mein,
The woman smiled above the queen;
While stationed always by her side,
Men saw—as bridegroom near his bride,
  Her chosen hero—Washington!

She wove for him a civic crown;
She made so pure his hale renown,
All glories of the antique days,
Waned in the clear, immaculate blaze
  Poured from his nature's noontide sun—
No slave of folly's catchword school,
  His instincts proud of blood and race
  She tempered with sweet, human grace,
  Till his broad being's rounded flow
Sea-like, embraced the high and low—
Swayed by the golden-sceptred rule,
  The equal will of Washington.

His influence spread so wide and deep,
Earth's fettered millions stirred in sleep;
And murmurs born of wakening flame
On the wild winds of twilight came
  From lands by despot swarms o'errun—
They too would win the priceless boon
  Of Freedom's dower—they too would see,
And clasp the robes of Liberty;
  But, throned within the virgin west,
  She heard them not—she loved to rest
In dew-lit dawn, and tranquil noon,
  Next the strong heart of Washington!

Through shower and sun the seasons rolled,
November's gray and April's gold
They only raised (more calmly grand)
His genius of supreme command,
  Whose course, in blood and wrath begun,
Grew gentler, as the mellowing lights
  Of peace made beauteous sky and sod—
  His evening came—he walked with God;
And down life's gradual, sunset-slope,
  He hearkened to a heavenly hope—
"Look up! behold the fadeless lights
  Which rise to greet thee, Washington!"

He dies! the nations hold their breath!
He dies! but is he thrall to death?—
Thousands who quaff earth's sunshine free,
Are less alive on earth than he;
  Lacking that power which thrills through bone
But God's elect, that winged spell
  Which like miraculous lightning darts
  Electric to all noble hearts—
  Flashed from his soul's sublimer sphere,
'Tis still a matchless influence here!
Majestic spirit! all is well,
  Where'er thou rulest—Washington!

—*Paul H. Hayne.*

IMMENSE GLACIAL REMAINS.—Prof. T. V. Hayden says that on the east side of Wind River peak, Wyoming Territory, and on the east base of Fremont peak, the remains of the huge glaciers which once covered the region have been discovered. On the west side of Wind River range, the moraines and glaciated rocks were found on an immense scale. He thinks that on this side a glacier must have formerly existed having a length of 80 miles and a width of 12 miles with arms extending up the gorges of the streams to the very water divide.

JAPAN is now manufacturing boots for the United States from leather brought from American ports.

IS THE SUBDIVISION OF ELECTRIC LIGHT A FALLACY?—Mr. W. H. Preece, the eminent electrician and manager of the English postal telegraph system, contributes a paper to the *Philosophical Magazine*, in which he points out that the theory of the electric light cannot be brought absolutely within the domain of quantitative mathematics, for the reason that we do not yet know the exact relationship existing between the production of heat and the emission of light with a given current. We, however, know sufficient to predicate that what is true for the production of heat is equally true for the production of light beyond certain limits. He shows that the full effect of a current can only be obtained by one lamp on a short circuit, and that when we add to the lamps by inserting more of them on the same circuit, or on a circuit so that the current is subdivided, the light emitted by each lamp is diminished in the one case by the square, and in the other case by the cube, of the number inserted. With dynamo-electric machines there is a limit which has to be reached before this law begins to act, and it is this fact that, in Mr. Preece's opinion, has led so many sanguine experimenters to anticipate the ultimate possibility of extensive subdivision of the light—a possibility which he considers hopeless, and which experiment has hitherto proved to be fallacious.—*Scientific American.*

THE ELECTRIC LIGHT DANGEROUS.—Mr. J. M. Stearnes, Jr., of Brooklyn, points out a novel source of danger possible with the electric light, namely, its effect upon the nervous system. He says: "The very high penetrating power of light waves from incandescent metal or carbon heated by electricity is well known. It is so high, indeed, that the shadows cast by the light are blacker than Erebus, indicating an immense absorption of force by the intervening objects, and to a large extent destroying their reflection and diffusion, as is the case with lights of lesser tension. A reflector used with an electric or calcium light does not produce anything like a corresponding effect as when used with a common gas-flame, as persons familiar with calcium lights well know. And it follows, therefore, that the black shadows of the electric flame must be due to the absorption of light waves. Now, in the light of an electric arc or incandescent lamp, one is to be subjected to a very powerful stimulant from the mere obstruction which his body affords. Our eyes cannot bear it all, and there is no reason to doubt that every nervous tissue will feel its use. We have already in this climate enough of nervous stimulation, and a fearful catalogue of nervous diseases, arising from too much force."

GEOLOGICAL.—The *Polytechnic Review* learns through a private letter from Dr. T. Sterry Hunt, that the Geological Congress at Paris was a great success. There were 260 members present; and various committees were formed, the work of which will prove highly important and useful. Arrangements were made for a Congress, to be held in 1881, at Bologna. From another source we learn that Dr. Hunt has returned from England, and will spend the winter in Montreal, Canada, where, as scientific men will be interested to hear, he expects to devote himself to important scientific investigations. Before leaving England, he accepted an invitation to deliver two lectures at Cambridge —a graceful and merited recognition of the ability and reputation of an American *savant*.

SOLAR AND ARTIFICIAL HEAT.—Prof. S. P. Langely, Director of the Alleghany Observatory in addition to the routine work connected with the institution over which he presides, has lately been busily engaged in completing a direct experimental comparison between the heat of the sun and the highest heat attainable in the arts. The result of his investigations indicate that the sun's *intrinsic* heat is almost beyond comparison greater than that of any blast furnace, and far larger than has been reckoned by the French physicists.

RAILWAY BUILDING FOR THE COMING YEAR.

A correspondent of the *Railway Age*, who has been largely engaged in railway building, takes a very enthusiastic view of the prosperity of that business in the immediate future. He anticipates a vast influx of population into the Western States and Territories, during the next few years, by reason of the present business depression and unsettled political condition of Europe, which will both add largely to the receipts and furnish cheap material and labor for construction purposes. Speaking of the coming immigration, he says:

During the past five years, commencing with March of this year, there will be a tide of immigration setting in from the East, and by the East I mean not only our own Puritan New England, but from the healthiest, strongest and best element of the Eastern countries—Prussia, Norway, Sweden, Schleswig-Holstein, etc., an agricultural people, seeking homes of their own. One million of them are on the Western prairies now. They write home (we will say) 10,000 letters a year. These 10,000 letters, couched in different languages, are repeated 10,000 times, and finally reach the ears of twice as many more. Hence, these people will come to the country where they can make a home competence for their wives and families.

Now, this being so, it is self-evident that means of access must be furnished to the cheap lands of Dakota, Minnesota, Arizona, Kansas and southwestern Kansas, as well as Missouri, the Indian Territory, and the West, even to the Pacific ocean.

On the question as to the development of the country and construction of railways, he says: Immigrants in coming to new countries always seek the same latitudes. The Swede and Norwegian want Minnesota, as well as do many of our hardy people from the Eastern States. The German wants central Wisconsin, but goes most everywhere, as does the American. The Englishman is conservative, and "waits." All these people will seek as they come, rapid transit, and railways are the most rapid. For this reason, the vast multitude that are coming westward year by year will be increased this year, and the next and the next, until there will be smiling homes and cottages and school houses and churches, in all the west, southwest and northwestern country, even to Alaska, which Mr. Seward was laughed at for purchasing for a less sum than a New York capitalist can get into good society on. Hardly a lady to-day but is petting the Alaska seal sacque she wears.

Leadville, Colorado, and the mines in Montana, and the general development of mining interest, with the accompanying influx of population, demands roads. Also quick accumulations of wealth taken from the earth, both in mining and agriculture, give means to build roads. Capital is going into the development of these mines, and they are yielding immense profits since improved machinery has been put into them.

Agricultural, mineral and animal products alone will increase the mileage of construction for years to come. This year it will be increased 2,000 miles over 1878. This will include many narrow-gauge roads as well as standards.

LINING FOR BOILERS.—Mr. Frantz Beuttgenbach gives the following recipe for the preparation of a coating for the inside surface of boilers to prevent the formation of scale: Gradually dissolve 5 lbs. of a mixture of 25 parts of colophonium, 2½ parts of graphite, and 2½ parts lamp black in 40 lbs. of boiling gas tar, adding about 1 lb. tallow. The solution is diluted with about 50% of petroleum and applied in a warm state. It has a pungent smell and should be put on rapidly, the precaution of using closed lanterns being necessary. Its effect is to cause the scale to came off in large flakes when picked.