THE EVENING NEWS.

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UNIVERSITY LECTURES.

ASTRONOMY.

BY PROF. ORSON PRATT, SEN.

LECTURE IV.

The Seasons.—Subdivisions of the Ecliptic into Signs.—Precession of the Equinoxes.—Sidereal and Tropical year.—Revolution of the elliptic orbit.—Anomalistic year.—Geocentric and Heliocentric places of a Heavenly Body.—Earth's Mean and True Longitude.—Mean and Apparent time.—Distributions of Temperature.—Hottest and Coldest days of the year.—Permanency of the mean annual temperature.—Invariability of the earth's diurnal and annual Periods.—Stability of the Laws of Motion.—Interior Temperature of the earth as affected by the Sun.—Ocean Temperature.—Cause of the great Currents in the Ocean.—Atmospheric Phenomena.—Reflections on the Origin of Planetary Motion.

THE first subject which we propose to investigate in this lecture is the Seasons. During the time that the earth performs one annual revolution, the inhabitants experience a variety of seasons.

Those who live in the southern hemisphere have their seasons in the reverse order of those in the northern. December, January and February are their summer months; while here, they are our winter months. Their spring corresponds to our autumn; their winter to our summer; their autumn to our spring. When the days in the northern hemisphere are the longest, in the southern they are the shortest; and vice versa; when they are the shortest here, they are the longest there. From the 21st of March to the 21st of September, the sun shines without any intermission on our north pole, while the south pole during that time is enveloped in darkness. From the 21st of September to the 21st of March, the south pole is constantly enlightened by the sun, while our north pole is left in darkness. The whole order of the seasons in the northern hemisphere is repeated in the southern, but during the opposite time of year.

If the earth revolved around the sun directly from west to east, that is, if the plane of the earth's orbit coincided with the plane of the equator, there would be no variety of seasons; and also the days and nights over the whole earth would be of equal length. If the earth revolved around the sun from south to north, and back again to the south, then our seasons would have the greatest possible change that could be given to them. The difference between the length of days and nights would increase with much greater rapidity, and the extremes of temperature between summer and winter would also be far greater. On the 21st of March the days and nights would be equal in all latitudes; from that time to about the 10th of May, the days would in our latitude increase from 12 hours to 24, while the nights would decrease from 12h. to nothing. From the 10th of May to the 2nd of August, the sun would not set to us, but he would be seen among our circumpolar stars, exhibiting the same apparent phenomena manifested by those stars. About the 2nd of August night would again set in, the length of which would now increase until the 21st of September, when the days and nights would again be equal. From the 21st of September the length of the nights would increase until about the 11th of November, when the sun would set and remain below the southern horizon about eighty days, or until about the 31st of January, when the day would set in being only a few minutes long at first, but increasing rapidly in length until the 21st of March, when day and night would again be equal.

Thus if the earth revolved in an orbit whose plane was perpendicular to the plane of the equator, the vicissitudes of the seasons and the variations of day and night would be such as to render our globe unfit for the habitation of man. At one season of the year he would be scorched not only with a vertical sun, but with an accumulation of heat arising from the great length of the day; while at another season he would be exposed to all the severity of cold experienced in the polar regions.

If the earth should revolve around the sun in any other direction, except the two that we have already mentioned, the difference of the seasons, and of day and night would be proportional to the inclination of the ecliptic [illegible]

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By the earth's rotation, this aerial ocean is gathered up from the two poles into the equatorial regions, where it is maintained at an elevation above the centre of the earth nearly fourteen miles more distant than the polar elevation. Should the earth cease its rotation, not only the oceans of water, but the ocean of air would flow down from the equator and torrid zones to the two poles, leaving the lands in those regions which are now elevated above the sea, with an atmosphere so rarified as to be totally incapable of maintaining respiration; while none but those lands which are now at the bottom of the equatorial sea would be blessed with air of sufficient density to sustain life.

Everything that we have thus far investigated, pertaining to this creation, exhibits the most profound wisdom and wonderful skill in the adjustments of figure, of magnitude, of proportions, of motions, of antagonistic forces, all combining to sustain the peculiar vegetable and animal economy adapted to these combinations. Who can but acknowledge the footsteps of Divinity in every part and in the whole?

We wonder at the power and wisdom displayed in the working of this grand terrestrial machinery, but how much more wonderful is the origin of the machine and the origin of the stupendous motions imparted to it.

How the orbitual and rotatory motions of our planet were first impressed upon it, is not known. By some it is supposed that these motions were given directly by the Creator, at the time of the creation. By others, it is conjectured that they are the results of some general law not yet discovered. It is very evident that divine wisdom generally manifests its purposes, and exhibits its power, and brings to pass its designs, in accordance with certain general laws. When these laws are unknown, the phenomena resulting often appear arbitrary, and are generally ascribed to a supreme power acting independently of law. Before closing this series, the lecturer may venture to advance a theory of his own, to account for the origin of planetary motion, and many other phenomena hitherto unexplained in the grand machinery of the universe. In the meantime, let us exert every effort of the mind to form a correct idea of those sublime exhibitions of our system which have been sought out, and are well understood by the scientific world. This will prepare us to launch forth into the unknown, in search of laws of a still higher order of generalization, under which may be martialed those apparently isolated and out-standing phenomena, the explanation of which have seemed hitherto to baffle the most powerful and giant intellects which have attempted their solution.

[SPECIAL TO THE DESERET NEWS.]

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AFTERNOON DISPATCHES.

CONGRESSIONAL.

SENATE.

Morton introduced a bill to raise the Prussian mission to a level with the Paris and London missions, and to fix the salary of the minister at $7,000 and that of the Secretary of legation to $2,625.

A message was received from the House announcing the death of Representative Covode, of Pennsylvania, when the usual eulogistic remarks were made and the Senate took a recess, at 1:45, until evening.

In the evening session they took up the legislative, executive and judicial appropriation bill, which, with several amendments, was ordered printed. Adjourned.

HOUSE.

In the House, Starkweather reported a bill to re-instate W. H. Hanscom, late naval contractor, which was opposed by several Representatives, on grounds that were telegraphed in brief this morning. The bill passed by the following vote: yeas, 143; nays, 87.

Schofield, from the committee on naval affairs, reported a bill for the enlistment of three hundred additional seamen for the practice-ship *Annapolis*; passed.

The House then went into committee of the whole on the naval appropriation bill. The committee then arose and reported the bill, which passed. Adjourned.

NEW YORK.

More particulars of that dreadful Railroad Accident—Narrow escape from disaster.

The lightning express train on the Erie railroad, due here at 7:10 a. m. had a narrow escape from a terrible disaster near Port Jarvis. While running at the rate of thirty miles an hour the engine struck an iron drawhead which had been dropped by the preceding train, and was instantly thrown from the track. After running some distance over the ties, the engine broke loose from the train and was precipitated down an embankment, the train remaining safely on the track. The engineer remained on the engine and was seriously injured. Had the train gone with the engine, another New Hamburg horror would have had to be recorded.

The proprietors of the sleeping car lines have made a present of ten thousand dollars to the wife of Conductor Vosburg, who was killed in the Hudson River accident.

NEW YORK.—John H. Devine, Long Island, an accomplice of W. Kelly, both the murderers of Garrett Nostrand on the 21st of January, yesterday confessed the crime to the Sheriff. Nostrand, he says, was drunk at the time. Devine was instigated by Kelly to knock him down. Kelly then struck him with a club and said: "I have finished him." Kelly denies the whole statement.

Nothing has been heard from New Hamburg or Poughkeepsie, of the Italian Consul at Montreal, Mr. Kinsella, or Dr. Lucia, attache of that consulate, for whom enquiries have been received by telegraph from their friends. It is only conjectural or suppositious that they were on the train, but as they have been widely announced as being among the missing, it is at least strange that they do not report themselves. The strangest mystery of this deplorable affair yet remains to be told. Mr. Mallay, of Poughkeepsie, the Coroner, has in his possession a pair of shoes belonging to a girl of about fifteen years of age. These shoes contain a pair of feet, all that remains of the body of which they were once members, the rest having been consumed in the conflagration that followed the collision. These shoes were picked up near the foot of a telegraph pole that stands on the embankment leading to the bridge from the north, and scarcely six feet from the end of the Bridge. How they came there is a mystery, equally impenetrable with that of their proper ownership.

MASSACHUSETTS.

BOSTON.—A Halifax dispatch states that the schooners *A. H. Hinsen* and *A. J. Franklin*, together with their stores and cargo were condemned to-day as forfeited to the Queen by reason of their violation of the fishery laws, notice of an appeal in both cases was given by the defendants.

TENNESSEE.

War against the Revenue laws.

NASHVILLE.—A force of deputy marshals and revenue officers, with a guard of soldiers, who had been sent to Franklin county to arrest five illicit distillers, after making the arrests were surrounded by 300 armed men and made prisoners, and the property which had been seized rescued, and the revenue force maltreated. That part of the State is in open war against the revenue laws.

PENNSYLVANIA.

Distressing fire.

DAYLESTOWN.—A dwelling house, in Northampton township, was burned last night. Two children perished in the flames. Their mother was seriously burned.

ARIZONA.

Indian and outlaw depredations.

TUCSON, ARIZONA, Jan. 29, via SANTA FE, N. M., Feb. 10.—A terrible state of affairs exists throughout Arizona, in the face of opposite representations. The Apaches are increasing their works of theft and murder. Within two weeks they have captured a train and killed one man and wounded several others, between Phoenix and Wickenburg. Another train was attacked between Camp McDowell and Florence, from which they stole eighteen mules and killed George Kane. Tully, Odwa & Company's train was stopped thirty miles south-east of here, their stock stolen, and one man killed. The mail carriage, on the last down trip, between Wickenburg and Phoenix, was attacked, and only escaped by the amazing exertions of the driver and team. Near Tubac, Joe King was shot through the groin. A number of horses have been taken from there, and the farmers are fleeing hence for safety. The friendly Papagos have had many horses stolen by the Apaches. Sixteen mules were stolen near Florence and Gila City, and a hundred head of cattle at the same place. This state of war is similar in Central and Northern Arizona, about Prescott. Representative men from all parts of the Territory are here attending the legislature, and several mass meetings have been held to counsel what is best to do. In this critical period an order has come to transfer six companies of cavalry from Arizona to the undisturbed portion of Washington Territory. Added to the Indian horrors, is that of an apparent determination of Mexican and other outlaws to plunder the persons and assassinate the citizens along the Gila road, from Arizona City, fifteen miles eastward.

On the 24th of December the bandits massacred Charles Reidt, James Little and Thomas Oliver, at Mission Camp, sacked the station, stole six fine horses and escaped to Sonora, and have not yet been captured, though the Governor has offered $1,000 reward and the citizens $500 more. About the 21st inst., John Keibride died from the effects of poison, believed to have been administered at the instance of a Mexican woman on the 20th. Half a dozen more men were poisoned at Gila Bend, but survived. It is believed to have been the work of Thomas W. Jones, acting in connection with the Mexican outlaws. Gov. Safford promptly offered a reward for the arrest of Jones, and within twenty-four hours thereafter he was taken, within thirty miles of the Mexican line, whither he was trying to flee for safety.

The Governor has also addressed a message to the legislature, requesting authority to place not to exceed two hundred men in the field in such emergencies, to pursue and capture the desperadoes and hostile Apaches. Our boldest citizens, who are noted for temerity, are abandening their farms and stations, acknowledging what they never have done before, that they are discouraged. The delegates from Arizona and New Mexico should present a bill to Congress for the protection of our southern borders, and enlist the California and Texas Senators in its behalf. The Mexican bandits avow their intention to clear the Gila settlement of whites. The members of the judiciary committee are contending that petit larceny is an infamous crime and therefore can only be prosecuted in accordance with the fifth amendment to the United States Constitution. This will read strangely to all those States and Territories which seem to have never made such a discovery.

FOREIGN NEWS.

FRANCE.

Armistice extended—The elections—Preparations to enter Paris—Affairs in Paris.

There is great mortality among children. Many respectable people are making efforts to leave, dreading a renewal of the war, which will bring on worse horrors than ever. The actual condition of the city is little changed. The Champs Elysees is very little damaged; the Bois de Boulogne is destoyed at the entry to the Lake, and in other parts partly. The shops are slowly commencing to re-open. There is no gas in the city yet. The order is good, but the popular sentiment is intensely excited at the idea of the entry of the Prussians; but the feeling is growing gradually more lenient towards the enemy. There is a report that the Prussians sent an army corps to Belfort on Thursday, having resolved to carry it by assault. The railways are getting into good condition again. The American minister went on Wednesday from the city for a few days' relaxation from his duties, and is now in Brussels.

VERSAILLES, 8.—Yesterday, eighty field guns and a hundred and forty thousand rifles were delivered at Ivry and Vanures.

The Red Prince hs arrived and announces that the district occupied by the second army corps is peacefully disposed.

Things look gloomy to-day. Paris may be entered before the 19th. Preparations are making for a heavy bombardment, should any possible complications occur. The attitude of the city is apathetic and a re-action is expected. The arrangements for supplying food are looking tolerably well. The mines at the gates have been destroyed.

Bismarck is again quite ill. His state causes grave uneasiness.