

been made in that direction, it has not been able to compete with steam in an economical point of view, and has many difficulties to overcome before it can.

METEOROLOGY IN ALGERIA.

The French Government has just determined on establishing not fewer than twelve meteorological observatories in Algeria,—namely, at Algiers, Milianah, Teniet el Haad, and Orleansville, in the province of Algiers; Oran, Tiaret, Tlemcen, and Sebdoou, in that of Oran; and Bona, Constantina, Babua, and Beskara, in that of Constantina. At the request of the government, the Academy of Sciences at Paris has drawn up a series of instructions as to the observations to be taken, and the time and manner of taking them in these new establishments. The Academy is of opinion that, for the present, it will be prudent to limit the observations to—1. Temperature and distribution of heat; 2. Atmospheric pressure; 3. Humidity of the air; 4. Rain, snow and hail; 5. Direction and intensity of the wind; and 6. The state of the sky, reserving observations on magnetism, electricity, &c., until a sufficiently numerous and experienced *personnel* shall have been formed. As to the time of taking the observations, the Academy desires that it shall not be merely every three hours during the day, as in most observatories, but that it shall be every hour, day and night. It also desires that the greatest exactitude possible shall be attained in taking and recording the observations. The Academy is of opinion that the taking of meteorological observations in Africa, the only part of the world in which they have heretofore been almost completely neglected, will be of great scientific importance. But it is said that instead of the twelve observatories proposed, five or six would be sufficient—three on the coast, at Algiers, Bona, and Oran, the remainder in the interior. In the course of the discussion to which the matter gave rise, it was stated that the tempest which caused such terrible disasters in the Black Sea last year, was felt, more or less, over the greater part of the continent of Europe, and that it was announced by telegraph to have reached Austria long before it got to Paris. This fact led to the remark that, when the system of electric telegraphs shall be more widely developed, and meteorological observatories shall be more numerous, it will be possible to announce at a great distance the approach of a storm, and so enable timely precautions against it to be taken.

PROGRESS OF ASTRONOMICAL SCIENCE.—Seventy-five years since the only planets known to men of science were the same which were known to the Chaldean shepherds thousands of years ago. Between the orbit of Mars and that of Jupiter, there occurs an interval of no less than three-hundred and fifty-millions of miles, in which no planet was known to exist before the commencement of the present century. Nearly three centuries ago, the immortal Kepler had pointed out something like a regular progression in the distance of the planets as far as Mars, which was broken in the case of Jupiter. Being unable to reconcile the actual state of the planetary system with any theory he could form respecting it, he hazarded the conjecture that a planet really existed between the orbits of Mars and Jupiter, and that its smallness alone prevented it from being visible to astronomers. But Kepler soon rejected this idea as improbable.

THE PLANETARY SYSTEM.—Comparing the magnitudes of the major planets, we find one, Venus, about equal to the earth; two, Mercury and Mars, considerably smaller; four, Jupiter, Saturn, Uranus and Neptune, each much larger than the earth, the volume of the largest, Jupiter, being more than 14000 times greater than that of our globe. The *surface* of the earth is to that of all the other planets, exclusive of the asteroids, satellites, and rings, as 1 to 258. The area of the solar surface is 48 times greater than that of all the known planetary bodies in the system, and more than twelve thousand times greater than that of the earth alone.—*N. Y. Com. Adv.*

ROSSE'S TELESCOPE.—Says a scientific writer:—To obtain some idea of the immensity of the Creator's works, let us look through Lord Rosse's telescope and we discover a star in the infinite depths of space, whose light is 3,500,000 years in travelling to our earth, moving at the velocity of twelve millions of miles in one minute. And behold God is there!—*Ibid.*

THE TRADE WINDS.—The origin of the trade winds at the surface of the earth is thus explained:—A number of natural agencies are at work to disturb the equilibrium of the atmosphere, and to give rise to ærial currents; among them the most important is the difference of temperature in different parts of the earth. The air within the tropics, constantly heated by the rays of our almost perpendicular sun, is rendered lighter, and is pushed upward by the heavier air North and South of this region. A current in this direction from each pole is thus produced at the surface of the earth,

while an opposite current toward each pole is generated by the rarified air which rises above the heated belt, and flows backward like water seeking its equilibrium. These currents, on account of the rotation of the earth, are not along the meridian, but those at the surface take a Westerly direction, while those above flow in an Easterly course.—*Ibid.*

WINDS IN THE NORTHERN HEMISPHERE.—Professor Coffin, of Lafayette College, Pennsylvania, in an elaborate scientific paper, says that there exist in the Northern Hemisphere three great zones of wind, extending entirely around the earth, modified, and in some cases, partially interrupted by the configuration and character of the surface. The first of these is the trade wind, near the equator, blowing, when uninterrupted, from Northeast to Southwest; this belt is interrupted, however, in the Atlantic ocean, near the coast of Africa, upon the Mediterranean sea, and also in Barbary by the actions of the Great Desert. The second is a belt of Westerly wind, nearly 2,000 miles in breadth, between latitude 35 and 60 North, and encircling the earth, the Westerly direction being clearly defined in the middle of the belt, but gradually disappearing as we approach the limits on either side.—North of this, there is another system of winds blowing Southwardly, from high Northern latitudes, and gradually inclining toward the West as it moves into a latitude of greater Easterly velocity.—*Ibid.*

A CONTRIVANCE FOR REMEDYING SMOKEY CHIMNEYS.—The following method for remedying smokey chimneys is recommended in the *London Critic*:—A revolving fan is placed vertically in the opening of a small, compact, moving cowl, fixed on the chimney top. The gentlest current of air sets this fan in motion, creating an upward draught in the chimney, preventing the return of smoke, gaseous vapors, &c., into the apartment, and also the falling of soot and rain.—*Ibid.*

A NEW THEORY ON FOSSILS.—A practical miner is writing in the *London Mining Journal*, to prove that fossils and rocks grow. He affirms that quartz grows in the Devon mines in a short space of time, and that the crystals draw their nutriment like vegetables, from the rocks on which they form. He does not believe, with the geologists, that the fossils found in rocks once lived on the surface of the earth, but says they invariably take the cleavage way of rocks, with the top of the plant upward, whereas, had they been buried by convulsions, they would have been lying in all positions. He finds as he thinks, that every rock produces its own species of rock plant.—*Ibid.*

Departmental Notices.

To Municipal and School Corporations in Upper Canada.

PUBLIC SCHOOL LIBRARIES.

The Chief Superintendent of Schools is prepared to apportion *one hundred per cent.* upon all sums which shall be raised from local sources by Municipal Councils and School Corporations, for the establishment or increase of Public Libraries in Upper Canada, under the regulations provided according to law.

In selecting from the General and Supplementary Catalogues, parties will be particular to give merely the catalogue number of the book required, and the department from which it is selected. To give the names of books without their number and department, (as is frequently done,) causes great delay in the selection and despatch of a library. The list should be written on a distinct sheet of paper from the letter, attested by the corporate seal and signature of the Trustees; or by the corporate seal and signature of the Reeve or Clerk of the Municipalities applying for libraries. For Form, see below.

SCHOOL MAPS AND APPARATUS.

The Legislature having granted annually, from the commencement of 1855, a sufficient sum of money to enable the Department to supply Maps and Apparatus (not text-books)