

SCIENCE AND MECHANICS.

LORD ROSSE'S TELESCOPE.

At the meeting of the Dublin Royal Academy, on March 17, Dr. Robinson gave an account of the present condition of Lord Rosse's telescope. Dr. Robinson found that the speculum (whose figure, as he had formerly stated, was not quite perfect,) as well as a duplicate one, had been polished by the workmen; and as he apprehended no difficulty in the process, it was repeated. An unexpected difficulty, however, occurred, which made much delay, till Lord Rosse discovered the cause. The success of the operation requires that it be performed at the temperature of 55 degrees. In winter this must be obtained by artificial heat—which, however, increases the dryness of the air, so that the polishing material cannot be kept on the speculum. In this case the surface is untrue, and gives a confused image. This was verified by the hygrometer, and remedied by a jet of steam so regulated as to keep the air saturated with moisture. The result was immediate; and at the first trial the speculum acted so well that it was unnecessary to try any further experiments. Three additions had been made to the telescope:—1. The movement in right ascension is given from the ground by machinery intended to be connected with a clock movement which is in progress. 2. To obviate the difficulty of finding objects, an eye-piece of large field and peculiar construction is connected with a slide, so that it can be replaced by the usual one in an instant. It magnifies 208 times, and employs nearly four feet of the speculum, the same as Herschel's 40-feet; thus giving the power of trying what that instrument might show. 3. The micrometer is peculiar—a plate of parallel glass, with a position circle attached. Light admitted at its edge cannot escape at the parallel surfaces, except they be scattered, and a scale of equal parts engraved on one of them with a diamond—luminous in a field absolutely black. The exceedingly unfavorable state of the weather subsequently preventing much from being done; in fact, there was but one good night, the 11th ult. In the moon he observed the large flat bottom of the crater covered with fragments, and satisfied himself that one of the bright stripes, which have been often discussed, had no visible elevation above the general surface. In the belts of Jupiter, streaks like those of Pyrrhus's cloud were seen; and the fading of their brown colour towards the edge is evidence that they are seen through a considerable and imperfectly transparent atmosphere. A similar shade in the polar regions, where little cloud is to be expected, seems to indicate that the brighter bands are cloudy regions, and the more dusky show the body of the planet. Several nebulae were examined—and, as formerly, all were resolved. That of Orion is most remarkable. Even before the mirror was perfect, and in bad nights, that part of it which prevents the strange flocculent appearance described by Sir John Herschel is seen to be composed of stars, with the lowest power, 360. But Dr. Robinson's eye required 530 to bring out the smallest stars, amongst which these are scattered. Having seen them, and known the easiest parts, they were seen with the 3-feet and 500. Dr. Robinson having seen a recent notice in which this nebula is said to have been resolved by the observers of Harvard University, U. S., with a Munich achromatic of from 15 to 16 inches' aperture. He has often seen it with Mr. Cooper's of 13.5, a difference easily to be allowed for, but never saw any trace of resolution. He does not in the least dispute the observation; for a precise knowledge of the place (which Dr. Nichol had mentioned) with a purer atmosphere and sharper eyes than his are sufficient to account for it; but he cannot refrain from remarking, that the epithet "incomparable," which they apply to their telescope, would be less extravagant if—in addition to the two stars of the trapezium which were discovered by the telescopes of Dorpat and Kensington—they had seen the other two which the 6-feet showed at the first glance, after its polish was completed. Another interesting object is the planetary nebula, h. 464, situated in the splendid cluster, Messier 46, and probably a part of it. It is a disc of small stars uniformly distributed and surrounded by the larger. Messier, 64, is a singular modification, of the annular form seen obliquely. The opening seems black as ink, and as its margin is one of those interior clusters of bright stars so often noticed before. But the most remarkable nebular arrangement which this instrument has revealed, is that where the stars are grouped in spirals. Lord Rosse described one of them (Messier, 51) in the year 1845; and Dr. Robinson found four others on the 11th, of which he exhibited drawings, h. 604 (seen by Herschel as a bi-central nebula,) Messier, 99, in which the centre is a cluster of stars. Messier, 97, looks with the finding eye-piece like a figure of eight; but the higher powers show star spirals related to two centres, appearing like stars with dark spaces round them—though probably high powers in a fine night would prove them to be clusters. Another fact deserves to be noted, from its bearing on Struve's "Eutides d'Astronomie Sellaire." In that admirable book, among other curious matters, he infers that the 18-inch telescope of Herschel penetrated into space only one-third of what was due to its optical power. He explains this by supposing the heavenly spaces imperfectly transparent. In computing the limit, however, he assumes that the Milky Way is in its greatest extent "unfathomable by the telescope." Dr. Robinson, however, chanced to observe it when it is deepest at 6-4, and is certain that its remotest

stars were very far indeed within the limit of the 6-feet, and very much larger than those of the nebula of Orion.—*Athenæum*.

AN IMPORTANT INVENTION.

There's nothing of utilitarian cast that is above the aim, beyond the reach, or beneath the notice of a *Yankee*. *Franklin* was the individual type of the race, equally at home in bringing down the lightning from the clouds or applying his discoveries in air, light and electricity to the safety of dwelling or to the construction of a new stove or to the remedying a smoking chimney. If of practical use, all were of equal importance in his eyes.

DRUMMOND—who has not heard of the *Drummond light*—is a man of this cast. He has invented and patented the candlesticks of the age—A candlestick, which not only holds the light but *makes its own candles!*

The tallow chandler has become an obsolete man—his light and glory is departed—his occupation gone.

I shall describe this invention as closely as necessary brevity will permit. The base of the candlestick forms a chamber. A screw passes its entire length, which being tubular carries the wick, as fast as needed from its coil below. Melted grease, lard or tallow is poured into the lower chamber of this candlestick, whence, after it cools, it is forced by the action of the screw upon an iron washer or wallower whose Upper side is coated with leather to render it air tight, into the upper tube which becomes a mould, turning out a candle as hard and smooth as can be made in any other mode, and of any desired length from an inch to two feet.

It will be perceived that the ingenuity of this contrivance is surpassed only by its simplicity. The wonder of the beholder is that an article so efficient, convenient and necessary, has not been invented long since.

Among its various advantages, the following are apparent at a glance:

1. Its simplicity, as well as its strength will keep it in order and repair for years. It must outlast any candlestick on the old principle.

2. There is no waste of remnants, the grease, lard or tallow consuming to the last particle.

3. As the candle can be made of moderate length there is no necessity of its running down by faring and wasting in a current of air or breaking down on one side, as is always the case with long candles during the summer season.

4. The wick is dry and smooth, and burns therefore with a clearer light.

5. The candlestick needs filling with grease, &c. but once a week, and with wick but once in six weeks.

6. It can be kept perfectly free from grease outside, as its construction manifests.

7. The farmer can use lard—always on hand at a farm—and of a quality which he cannot sell to advantage. Lard burned in lamps is dearer than lard oil in the same degree that it is cheaper when compressed into candles. This every one knows who has tried it.

8. The paramount advantage of this candlestick is that the light can always be kept near the object to be seen; the candle being if desired, always of the same length. This is a benefit every student can appreciate as of incalculable value.

What the demand for this candlestick is likely to become, may, be inferred from the fact that the demand for the article is three thousand candlesticks ahead of the supply, although one of the largest manufacturing in Cincinnati is steadily employed in turning them out.—*Cist's Daily Ad.*

FALL OF METEOR DUST.—Accounts from Vienna describe some remarkable phenomena of this sort, which occurred during the night of the 31st of January, and covered the snows near the city and the greater part of Lower Austria with a layer of grey, earthy, impalpable powder, blown thither by a sharp east wind of continuance. When the dust fell the wind ceased and the temperature rose. Professor Reissck, Dr. Wedl, and other scientific persons, have carefully analysed this substance, the chief portions of which consist of granules of quartz, particles of mica, humus, organic remains, and some fragments of wood coal, plants, insects, and infusoria. The air thus laden is held to have been derived from the steppes of Russia, and to have passed over the Carpathian chain. The learned professor maintains this view, by comparing the circumstance with the falls of manna which occur periodically in Asia Minor, Persia, and the Caucasus.—*Literary Gazette.*

The *Lancet* remarks on the use of ether and chloroform: "Anæsthetic substances, besides being useful in diminishing the shock of operations and subsequent reaction, operate beneficially by rendering the after exhibition of opiates unnecessary."

WHEEL GREASE.—Two parts hog's lard by bulk, and one each of black-lead and wheat flour. Waggon wheels may be heard a mile off on a still morning, uttering the most dismal sounds, from the want of a little of this material, and which a very little imagination might trace late into the words—*meeze-e-ry, meeze-e-ry, meeze-e-ry!*