

ASPECTS OF THE PLANETS FOR DECEMBER.

SATURN

is morning star until the 12th, and, after that time, joins the increasing company of evening stars. He stands at the head of the roll during the month, for he reaches, in its passage, the most important epoch in his career, as far as terrestrial observation is concerned.

On the 12th, at 2 o'clock in the morning, he is in opposition with the sun, opposite to him in the heavens, as far away from him as possible. When, in these short days, the sun hastens to hide his red, round orb below the western horizon, then this beaming planet shows his radiant face above the eastern horizon, and shines during the entire night, slowly descending in the west as the great day-star appears rejoicing in the east.

Any intelligent observer can find Saturn's place in the sky, for he is nearly east of the Pleiades, and about half-way between Capella on the north and Betelgeuse on the south. He shines also with a serene light, entirely different from that of the twinkling stars. He rises on the 1st at a quarter after 5 o'clock in the evening, and is the only visible planet in the heavens till nearly midnight, when Jupiter appears upon the scene. The conditions under which Saturn may now be observed are very favorable, but they will not reach their culmination until the opposition of 1885, for he will then be farther north, and only a month past perihelion. He will at that time be about 100,000,000 million miles nearer the sun than at aphelion, and since perihelion and opposition nearly coincide, about the same distance nearer the earth.

The telescopic Saturn is now the personification of grandeur and sublimity. Even in a small instrument the picture is one of surpassing beauty. "I have seen the planet single, and now I see it double," was Galileo's wondering exclamation as he turned his imperfect instrument to the heavens in the dawn of the astronomical day. It was not till forty years later that the strange appendage, sometimes visible, and sometimes invisible, was proved to be the rings of Saturn. With our finer instruments, and the flood of knowledge gained from observation and research, we have still to thank the pioneer astronomers for the first fruits of this noble science, and for a devotion to the cause which cost them obloquy, imprisonment, and even martyrdom.

A very powerful glass is required to bring out the magnificent and also the delicate aspects of the most charming telescopic object in the heavens, as well as the brilliancy of coloring which is a grand feature in the Saturnian system. Mr. Browning, an optician, and a practical and enthusiastic observer, thus describes the coloring of the planet on one of the exceptionally fine nights that are the delight of the telescopicist. The rings were gold in varying tints, shaded with brown; the body of the planet was yellow, orange, red, purple, shaded with brown; the division in the rings, pale brown; and the poles and narrow belts near the poles were pale blue. "But," said the observer, "there is a muddiness about all terrestrial colors when compared with the objects seen in the heavens. Those colors could not be represented in all their brilliancy and purity, unless we could dip our pencil in a rainbow and transfer the prismatic tints to our paper."

Saturn, now so pure in tint and tone, and so beautiful a member of the starry host, before many years have passed will change his aspect, as his rings begin to close, and as he bends his steps southward. He will again become the planet that in ancient times, on account of his dull yellow and dismal hue and sluggish motion, was held by astrologers to exert a malevolent influence on human affairs, and to be the source of many of the evils to which the human race is subject. Chaucer embodies the belief of the day in the following address of the god Saturn to Venus:

"My dere daughter Venus, quod Saturne,
My cours, that hath so wide for to turne,
Hath more power than wot any man.
Min is the strangel and hanging by the throte,
The murmur and the churles rebelling.
I do vengeance and pleine correction
While I dwell in the sign of the Leon.
Min is the ruin of the high halles,
The falling of the towers and of the walles
Upon the minour or the carpenter.
I slew Sampson in shaking the piler."

Science has changed all this. The ill-omened star is raised almost to the dignity of a sun. Saturn's eight satellites equal the sun's family of worlds. His rings, made up of myriad minute satellites, circling around the central orb, respond to the sun's family of asteroids. It is not improbable that enough of his primeval fires remain to give out heat and even light to the worlds of satellites and rings that own him as their lord.

Such are some of the claims to notice of the ring-girdled planet that on the 12th reaches the goal when it is at its nearest point to the earth during the present year.

The right ascension of Saturn on the 1st is 5 h. 23 m.; his declination is 21° 41' north; his diameter is 19' 4"; and he is in the constellation Taurus.

Saturn rises on the 1st at a quarter after 5 o'clock in the evening; on the 31st he sets a few minutes before 6 o'clock in the morning.

URANUS

is morning star. His course during the month is marked with an event that would be vastly more important to terrestrial view if it were not for his great distance. On the 24th, at 2 o'clock in the afternoon, he is in quadrature with the sun on his western side, half his course from conjunction to opposition being then completed.

The right ascension of Uranus on the 1st is 12 h. 9 m.; his declination is 0° 16' south; his diameter is 3' 6"; and he may be found in the constellation Virgo.

Uranus rises on the 1st about half past 1 o'clock in the morning; on the 31st he rises at half past 11 o'clock in the evening.

MERCURY

is evening star. He reaches his greatest eastern elongation on the 17th at 7 o'clock in the evening, and is then 20° 12' east of the sun. He may be seen at that time by the naked eye, if the atmosphere be clear and the sky cloudless. His great southern declination will, however, make him a difficult object to pick up. Observers inclined to try must look for him about the 17th, nearly a degree south of the sunset point, in the constellation Sagittarius, a short distance north-east of the bowl of the inverted dipper.

The right ascension of Mercury on the 1st is 17 h. 36 m.; his declination is 25° 33' south; his diameter is 5' 2"; and he is in Sagittarius.

Mercury sets on the 1st at a quarter past 5 o'clock in the evening; on the 31st he sets at 20 minutes past 5 o'clock.

MARS

is evening star. His path is in close proximity to that of Mercury, so that the two planets are twice in conjunction during the month. The first conjunction occurs on the 4th at eleven o'clock in the evening, when Mercury is 1° 26' south of Mars. The second conjunction occurs on the 29th at midnight, when Mercury is 2° 25' north of Mars. The events are noteworthy simply as interesting planetary aspects, for both planets are too near the sun to be visible.

The right ascension of Mars on the 1st is 17 h. 46 m.; his declination is 24° 17' south; his diameter is 4' 2"; and he is in the constellation Sagittarius.

Mars sets on the 1st at half past 5 o'clock in the evening; on the 31st he sets a few minutes before half past 5 o'clock.

JUPITER

is morning star during the month, making his last appearance for the present in that role. The interest in his movements greatly increases as he draws nearer the earth. He rises now an hour before midnight, and when the month closes will make his appearance above the eastern horizon at 9 o'clock. He is still in the neighborhood of Regulus, a few degrees east. The brilliant planet and the first magnitude star afford a fine opportunity for contrast between a planet and a star. Jupiter is superb and growing more so, and after he appears upon the scene he holds the scepter of sovereignty with a power that the brightest star of the myriad host may not dispute. Even Saturn beaming mildly from the empyrean treads the celestial pathway with becoming humility in the presence of his more powerful brother. Jupiter is almost alone in his present position. He has left behind him the grand galaxy of stars among which for the two previous years he made his shining way, and Regulus is his sole bright companion.

The right ascension of Jupiter on the 1st is 10 h. 29 m.; his declination is 10° 28' north; his diameter is 36' 2"; and he is in the constellation Leo.

Jupiter rises on the 1st at a few minutes after 11 o'clock in the evening; on the 31st he rises soon after 9 o'clock.

VENUS

is morning star. She is still a charming object in the eastern sky for two hours before sunrise, and is brilliant enough to hold her place till it is nearly time for the sun to appear. Though her luster is decreasing, she holds her own in the presence of Jupiter, the two planets remaining visible after all the stars have disappeared in the increasing light. The November dawns were made lovely by the presence of the two bright orbs. The December dawns will be equally charming from their continued presence, and observers will not need to rise very early to be present at the exhibition.

The right ascension of Venus on the 1st is 14 h. 11 m.; her declination is 11° 9' south; her diameter is 14' 2"; and she is in the constellation Virgo.

Venus rises on the 1st at 4 o'clock in the morning; on the 31st she rises not far from a quarter after 5 o'clock.

NEPTUNE

is evening star. After the 12th, the evening stars are in the preponderance, numbering on the list Mars, Mercury, Neptune, and Saturn.

The right ascension of Neptune on the 1st is 3 h. 17 m.; his declination is 16° 23' north; his diameter is 2' 6"; and he is in the constellation Taurus.

Neptune sets on the 1st at half past 5 o'clock in the morning; on the 31st he sets at half past 3 o'clock.

THE MOON.

The December moon fulls on the 2d at 2 o'clock in the evening. The moon is at her nearest point to Saturn on the 3d, and to Jupiter on the 8th. She is in conjunction with Venus on the morning of the 14th, at 37 minutes after 4 o'clock. The morning star and the lessening circle of the moon, only a degree and a quarter apart, will be lovely to behold as they make their appearance on the celestial scene, the picture remaining visible until it is nearly time for the sun to appear. The moon pays her respects to Mars on the 18th, the day after her change, and to Mercury on the 19th. On the 28th, she is in conjunction with Neptune, and on the 30th she passes Saturn for the second time within the limits of December.

Our satellite hides no large star from the view of observ-

ers in that latitude. But observers farther north, between the limiting parallels of 90° and 54° north, will be privileged to behold on the 29th, if they chance to be on the dark side of the earth, the occultation of Alpha Tauri, or the first magnitude star Aldebaran, the next best thing to the occultation of a planet.

Take Care of Farm Implements.

Some one once drew a graphic pen picture of a mortal foe of the farmer—one who labored for his destruction by night as well as by day, on Sundays, holidays, and work days alike. It was a "mortgage" that the writer of the sketch wisely regarded as one of the most active enemies to the farmer's purse and peace of mind.

There is, however, another agent for evil quite as active, to be found on every farm. It is known as rust. And although it annually destroys in the aggregate a vast amount of property, farmers too frequently neglect to take the measures necessary for protection from the ravages of this insidious foe. Hundreds of agriculturists are buying farm machinery, which, if properly cared for, the *Forest, Forge, and Farm* suggests, ought to last at least ten years. Most of it will be worthless in one-fifth of that time for lack of a little care.

A machine that is taken apart and properly cared for when not in use will do good work years and years after its counterpart has been thrown away by the man who had the habit of leaving it unprotected. Then the delays caused by broken machinery, loose bolts, and rotten or twisted frames, discovered just at the time when the loss of time means danger to the crop, more than counterbalance any time, trouble, or expense incurred in properly putting away the machine. The provident farmer will always clean and house his implements as soon as the harvest is ended. Whenever the paint on an implement shows signs of wearing off, it ought to be renewed. And when tools and implements are housed they should be placed just where they can readily be found when again sought for.

Chloroform Syncope Treated by Reversing.

As a valuable hint, we note that in the *British Medical Journal*, Dr. Albert I. Garland relates a case wherein he began to operate on a lady, aged forty-one, for the removal of scirrhus of the mamma. After examination of the heart, which was found normal, they commenced administering chloroform; but the cardiac action becoming very excited, a mixture of chloroform and ether was used. She was some minutes going under the influence, but there was scarcely any struggling, and the pulse was full, though jerky. He had not finished the incisions round the tumor when she suddenly became livid, and the pulse ceased. Artificial respiration was begun, the tongue drawn forward, and strong ammonia applied to the nostrils, without avail. He immediately jumped on the bed, and seizing her legs, raised the body, allowing the head to touch the bed. In a few seconds the color returned to the lips and the pulse to the wrist. Artificial respiration was soon resumed; hot water applied to the region of the heart; and she became sufficiently conscious to speak and to swallow some brandy and ammonia, soon, however, relapsing, pulse and respiration ceasing again. He again reversed, with the same result; but in a short time the syncope returned, and after applying the battery without success, he again reversed, and this time with a satisfactory result, as he was enabled, by the use of the battery and ammonia, to establish reaction.

He considers his case worthy of record, as the successful termination was clearly due to reversing the body, it being impossible, apparently, to stimulate the nerve centers by any other means; and it is a method of treatment which, he thinks, is not used so often as it deserves to be, judging by the reports of such cases, as he only remembers having seen it mentioned in one instance, and it is one so easily and quickly adopted.

A Great Lake East of Hudson's Bay.

Mr. F. H. Bignall, of a Canadian geographical society, has just returned from an exploring expedition to the north-east of Quebec, an expedition which left in June last, to discover, if possible, a great inland sea which has for some time been identified with Lake Mistassini, just north of the Province of Quebec. Mr. Bignall did not belong to the main expedition, which was equipped for an eighteen months' stay, but he reports having navigated 120 miles on a great lake, which he assumes to be an expansion of Rupert River, without having really reached the body of the lake. He says it lies from southwest to northeast, stretching toward the Labrador coast, between low-lying banks, and probably covers as much area, at least, as Lake Superior. The existence of such a body of water in this hitherto almost totally unexplored region has heretofore been the subject of many rumors, and further authentic reports will be looked for with great interest.

An Ingenious Blacksmith.

Mr. Charles Dunster, a blacksmith of Leesville, Ohio, has made a clock, mostly with blacksmith's tools, which has excited considerable comment in his neighborhood. It is principally of steel, and in a glass case so the movement can be seen, gives the time in eleven cities, striking the hours and quarters, and is seven feet high.