ASPECTS OF THE PLANETS FOR MAY.

NEPTUNE

is evening star until the 9th, and morning star for the rest of the month. He wins the first mention on the May roll, for he is the first of the four great planets, now playing the part of evening stars, to reach conjunction with the sun. He arrives at this important point of his course on the 9th, at 8 o clock in the morning. He is then in a straight line with the sun and the earth, the sun being in the center, the farthest from the earth possible, and farther off than any other known planet can be, his distance being 2,863 million miles. He is in conjunction or "joined to" the sun, rising and setting with the sun, and completely hidden behind the great luminary. After conjunction, he passes to the sun's western side, becomes morning star, and continues to play the role till the 12th of November, when he has swung round to the opposite quarter of the heavens, and is in opposition, his most interesting phase to observers.

If we could, at the time of Neptune's conjunction, take a bird's eye view of the solar system from a point above the earth, and were gifted with a power of vision to behold the family of worlds that circulate about the sun, we should see a wonderful picture. The central point of view is the huge globe of fire we call the sun. Our insignificant planet is brightly shining beneath our point of view on one side of the sun, and directly opposite, on the other side, Neptune's great orb lies on the system's remotest limits. A little to the east, Saturn with his rings and moons is swinging on toward conjunction. The giant Jupiter still farther east is making rapid strides toward the same goal. Uranus is plodding in the same direction, not having accomplished half his course. Mercury, small in size and nearest the sun, moves eastward with flying feet, between Saturn and Jupiter, in his swift course toward elongation, and completes the list of the five planets that are on the sun's eastern side. On his western side, Venus and Mars are seen, the one approaching and the other receding from the sun, within a day of passing each other. A diagram of eight concentric circles would form a simple means of recording from month to month the relative position of the planets in regard to the earth and the sun.

The right ascension of Neptune is 3 h. 5 m., his declination is 15° 37′ north, and his diameter is 2·5″.

Neptune sets on the 1st at twenty-four minutes after seven o'clock in the evening; on the 31st he rises about half-past three o'clock in the morning.

SATURN

is evening star until the 20th, and morning star for the rest of the month. On the 20th, at six o'clock in the evening, he takes his turn and comes into conjunction with the sun, ten days after Neptune. He carries out the same conditions described for Neptune, excepting that he is not so far off, his distance at conjunction being 1,014 million miles. Like his more remote brother planet, he passes to the sun's western side and becomes morning star.

On the 1st, at eleven o'clock in the evening, Saturn is in conjunction with Mercury, being about four degrees south of him. The planets set at that time about a quarter after eight o'clock, more than an hour after sunset, Saturn being south of the Pleiades, and Mercury about half way between them. Planets and Pleiades are low down in the west, but a good opera glass, a clear atmosphere, and a cloudless sky will bring them to view.

The right ascension of Saturn is 3 h. 40 m., his declination is 17° 44′ north, and his diameter is 15·4″.

Saturn sets on the 1st about a quarter after eight o'clock in the evening; on the 31st he rises about a quarter after four o'clock in the morning.

JUPITER

is evening star during the month, following in the wake of Neptune and Saturn toward the same goal, but far behind them in the race. On the 23d, at three o'clock in the morning, he is in conjunction with Mu Geminorum, a star of the third magnitude in the constellation Gemini. Planet and star approach nearest to each other at three o'clock on the morning of the 23d, being then fifty minutes apart. But they will be worth looking for on the evening of the 22d. Mu Geminorum is very near the ecliptic, and two degrees east of Eta or Tejat, a star near the position of the sun at the summer solstice, the dividing line between the tropic and the north temperate zones.

The right ascension of Jupiter is 5 h. 57 m., his declination is 23° 25′ north, and his diameter is 31″.

Jupiter sets on the 1st, about a quarter before eleven o'clock in the evening; on the 31st he sets a quarter after nine o'clock.

URANUS

is evening star. He has not completed half his course on the way to conjunction, though he is approaching quadrature.

The right ascension of Uranus is 11 h. 22 m., his declination is 4° 53′ north, and his diameter is 3·8″.

Uranus sets on the 1st at three o'clock in the morning; on the 31st he sets at a few minutes after one o'clock.

MERCURY

is evening star during the month. On the 14th, at five o'clock in the morning, he reaches his greatest eastern elongation, and is 21° 55′ east of the sun. This beaming planet may be easily found at elongation and for ten or twelve days before and after. His high northern declination makes the conditions for observation more favorable than will occur again for a long time, and he will be easily picked up during nearly the whole month. On the 14th he sets at nine o'clock, nearly two hours after the sun, a very rare occurrence. He may be found at that time about fifteen degrees west of Jupiter and a little farther north; about twenty degrees south of Capella; and six degrees north of the sunset point. An idea of Mercury's rapid motion may be inferred from the fact that on the 1st, when in conjunction with Saturn, he was between that planet and the Pleiades. On the 14th he has traveled far away over the sky-depths. He is then twenty degrees east of the cluster, while Saturn has scarcely changed his pose.

The right ascension of Mercury is 3 h. 38 m., his declination is 21° 26′ north, and his diameter is 6″.

Mercury sets on the 1st, about a quarter after eight o'clock in the evening; on the 31st he sets at six minutes after eight o'clock.

VENUS

is morning star and has so nearly approached the sun that she rises only an hour and a quarter before him. On the 10th she is in conjunction with Mars. The planets make their nearest approach at one o'clock, but they will form a pleasing picture on the morning sky when the earth has rolled far enough on her axis to bring them above the horizon. The planets rise about half past three o'clock on the 10th, an hour and a quarter before the sun. Venus will be easily found, and about forty-eight minutes south a small red star will be seen, which is the planet Mars. An opera glass or a very bright eye will bring him into the field.

The right ascension of Venus is 0 h. 18 m., her declination is 0° 12′ north, and her diameter is 14″.

Venus rises on the 1st at thirty-nine minutes after three o'clock in the morning; on the 31st she rises at ten minutes after three o'clock.

MARS

is morning star. We have described the only incident in his course.

The right ascension of Mars is 0 h. 32 m., his declination is 2° 16′ north, and his diameter is 4·8″.

Mars rises on the 1st about a quarter before four o'clock in the morning; on the 31st he rises a quarter before three o'clock.

THE MOON.

The May moon fulls on the 21st, at twenty-seven minutes past ten o'clock in the evening. The waning moon is in conjunction with Venus on the 4th, and on the same morning, four hours later, with Mars, showing how near the planets are to each other. On the 6th the four-hours-old moon is in conjunction with Neptune. On the 7th the one day-old crescent is in conjunction with Saturn, being eighteen minutes north. The moon sets on that evening more than an hour after the sun, and it is barely possible that, under the best conditions of atmosphere and sky, the near approach of crescent and planet may be seen. On the 8th the moon pays her respects to Mercury, on the 9th to Jupiter, and on the 16th to Uranus. Those who watch the conjunctions of the moon with the planets will find this an easy way of impressing upon the memory the relative position of the planets in regard to the sun.

THE OCCULTATION OF BETA SCORPII.

On the evening of the 21st the moon occults Beta Scorpii, a star of the second magnitude in the constellation Scorpio, ranking next in brightness to its leading brilliant, Antares. It is also a fine double star. The larger component is of the second magnitude, pale or yellowish white in color; the second component is of the fifth and a half magnitude and of a lilac color. The stars are thirteen seconds apart. The moon is half an hour past the full at the time of the occultation, so that nearly her whole disk will be illumined. An observer with a telescope large enough to separate the star will behold a beautiful spectacle. About eleven o'clock (the Washington time is thirty-two minutes after ten o'clock) the larger star will disappear behind the moon's bright edge, and in less than a minute the tiny companion will follow. This is the immersion of the star. The occultation will continue for an hour and a half. About half past twelve o'clock the companion stars will reappear at the opposite edge of the moon. This is the emersion of the star. The occultation may also be observed with a good opera glass, which, however, will not separate the star into its component parts. The bright moonlight will obscure the view to the unaided eye. The moon is constantly occulting the small stars lying in her path, but she does not often encounter a star of the size of Beta Scorpii.

The moon contributes the largest portion to the incidents of the month. For besides the close conjunction with Saturn, and the occultation of Beta Scorpii, she gets up for a favored few in the South Pacific Ocean the grandest and most sublime exhibition ever witnessed on this planet, when for six minutes she hides from mortal view the glorious orb of day.

State Geologist's Report of New Jersey.

The State of New Jersey's geological report for 1882 has just been published, and as usual with Prof. Cook's reports, the present one contains a great deal of information, not only useful to the citizens of New Jersey but to scientific men and students everywhere. The report contains maps and illustrations of some of the most interesting geological formations in the State.

AN ARTIFICIAL AURORA BOREALIS.

Laboratory experiments have frequently been resorted to to produce the aurora in miniature, and the resemblance to the original has been extremely close, but an artificial aurora on a large scale and with no electrical machinery has lately been effected by Prof. Lemstroem. He selected a station just within the Arctic circle, in North Finland, where there were two mountains close together and having altitudes of 2,600 and 3,600 feet. In accordance with the well known fact that electricity gathers upon points, two hills having clearly defined conical summits were selected.

He believed that aurora was the result of an endeavor on the part of certain forces to establish an equilibrium, and assumed that electricity was passing from one hill top to the other. Reasoning that if by any means this interchange could be hastened the effect would become visible, the summits were connected with their bases by a network of copper to serve as a conductor. Immediately an arch of the aurora appeared, estimated to be at least 360 feet above the top. An examination of the currents produced in the wires showed them to be positive. The spectroscope clearly revealed the well known lines of the aurora. Although the display was only of short duration, there could be no doubt of its genuineness or of the success of the experiment.

SEALS IN LONG ISLAND SOUND.

BY H. C. HOVEY.

The seal delights in cold water. To resist its chilling influence, nature has clothed it with thick fur, and wrapped the body in a layer of elastic fat. There are several varieties of this curious amphibian, and the pursuit of seals for their oil and skins and fur is an important source of national wealth. Steamers are constructed especially for this purpose, capable of resisting the pressure of the ice-fields where the most successful hunting is to be found. Not mentioning the seal-fur trade of Alaska, the annual production of seal oil from the fisheries of Newfoundland and Labrador amounts to 1,500,000 gallons, and that of Greenland is valued at about $300,000 more. In the height of the season it is said to be no uncommon sight to see 15,000 dead seals on the battle-field of a single night's contest with the hunters.

When I first published the statement that seals were formerly common in the waters of Long Island Sound, it was doubted by many if a creature so plainly Arctic in its preferences had ever frequented these more southern waters. According to colonial legends, their favorite basking place was the famous Red Rock in the estuary of the Quinnipiac River. The sailors of that time called them "sea-dragons," and for that reason this locality was, for more than a century, known as Dragon Bank. The name extended to the settlement since called Fair Haven, now included in the limits of New Haven. And the bridge by which it is joined to the rest of the city still bears the name of the Dragon Bridge.

My interest in these local legends has led me to ask the fishermen to report any instances occurring of the capture of seals in Long Island Sound. The result is that, especially since the introduction of the large nets now in use, I hear of a few seals as seen or caught every year. The number is insignificant from a commercial point of view, but enough to warrant the stories of their being plentiful here in colonial times, before the Sound was disturbed by steamboats, fog-horns, and other things that must seem alarming to such a timid animal. About four years ago a solitary seal was observed near the old place of resort at Red Rock; and about the same time another was captured at the Tomlinson Bridge, both these places being within the limits of New Haven! The latter specimen was stuffed and properly labeled as *Phoca vitulina*, and assigned a conspicuous place amid the myriad curiosities of the Peabody Museum. It was a comparatively small individual, not weighing more than forty pounds. Its color is now a yellowish white, which may be due to the action of the oil on the fur since it was dressed.

The long, severe winter just over seems to have led the seals southward, and numbers have been recently seen in the Sound. Two fine specimens were caught, April 11, near Guilford, Conn., by Messrs. Crittenden and Rackett, who found them smothered in their shad net. One of the pair was a male, weighing 86 pounds, dark haired, and spotted like a leopard. The other, a female, weighed 75 pounds, and was clothed with soft, silvery wool. They were brought to New Haven, and exhibited by Mr. H. R. Shepperd at the City Market. They will probably be secured for the Peabody Museum, where so many objects have already been placed illustrating the natural history of New England and its adjacent waters.

Microscopic Animals in Bricks.

The weathering of brick walls into a friable state is usually attributed to the action of heat, wet, and frost; but from recent observations of M. Parize, the real destroyer is a microscopic creature, and the action played by the weather is only secondary. He has examined the red dust of crumbling bricks under the microscope, and found it to consist largely of minute living organisms. A sample of brick dust taken from the heart of a solid brick also showed the same animalcule, but in smaller numbers. The magnifying power of the instrument was 500 diameters. Every decaying brick showed the same kind of population, but the harder the brick the fewer were noticed.