

POSITION OF THE PLANETS IN AUGUST.

JUPITER

is morning star, according to astronomical classification, which ordains that planets when on the western side of the sun are morning stars, and when on the eastern side, evening stars. The natural classification would make him evening star, for he rises at 9 o'clock at the beginning of the month and at 7 o'clock when it closes.

Words fail to picture the splendid appearance of this princely planet as he makes the circuit of the skies on August nights. He is at his best, for his opposition occurs on September 5, and the month before and the month after opposition include the most brilliant portion of his course. He is retrograding or moving westward, increasing in size and luster as he approaches the earth, rising earlier every night, and traveling north, which lengthens his stay above the horizon, as observers can see for themselves.

The moon is in conjunction with Jupiter on the 20th, the day after the full, at 7 h. 25 m. P. M., being 3° 44' south. The conjunction takes place very near the time when the moon and planet appear above the horizon.

The right ascension of Jupiter on the 1st is 23 h. 18 m., his declination is 5° 53' south, his diameter is 41".6, and he is in the constellation Aquarius.

Jupiter rises on the 1st at 8 h. 51 m. P. M. On the 31st he rises at 6 h. 47 m. P. M.

MERCURY

is evening star. He reaches his greatest eastern elongation on the 16th, at 7 h. P. M., when he is 27° 25' east of the sun. He sets then about an hour after the sun, but is 12° south of the sunset point, the moon is near the full and the summer twilight lingers long. These conditions make it difficult to find him, although he is nearly at his maximum distance from the sun. Mercury moving eastward from the sun meets Saturn moving westward toward the sun. The conjunction takes place on the 13th, at 8 h. 8 m. P. M., Mercury being 3° 36' south. The planets set on that evening about the time of the conjunction. Observers endowed with good visual power may have a glimpse of our celestial neighbors in the west soon after sunset, if the sky is cloudless and the atmosphere serene. A marine glass will be a valuable assistant in the search.

The right ascension of Mercury on the 1st is 10 h. 17 m., his declination is 11° 11' north, his diameter is 6".0, and he is in the constellation Leo.

Mercury sets on the 1st at 8 h. 12 m. P. M. On the 31st he sets at 6 h. 55 m. P. M.

VENUS

is morning star. She is close to the sun and invisible, but an incident occurs in her August course that, under other conditions, would attract great attention. She is in conjunction with Mars on the 22d at 3 h. 4 m. A. M., being 1' north. One minute of arc is a very small piece of sky, and the planets are so near together that they will seem to touch, or make an appulse. They are, however, below the horizon at conjunction and no human eye can witness the rare phenomenon that comes near being an occultation of Mars by Venus.

The moon, the day before her change, is in conjunction with Venus on the 3d, at 8 h. 12 m. A. M., being 3° 34' north.

The right ascension of Venus on the 1st is 7 h. 58 m., her declination is 21° 17' north, her diameter is 10".2, and she is in the constellation Cancer.

Venus rises on the 1st at 3 h. 51 m. A. M. On the 30th she rises at 5 h. A. M.

MARS

is morning star. His meeting with Venus has already been referred to. He has advanced so far on his course westward from the sun that he rises nearly an hour before the great luminary when the month closes.

The right ascension of Mars on the 1st is 8 h. 44 m., his declination is 19° 19' north, his diameter is 3".8, and he is in the constellation Cancer.

Mars sets on the 1st at 7 h. 11 m. P. M. On the 31st he rises at 4 h. 29 m. A. M.

SATURN

is evening star. He sets on the 1st about an hour and a half later than the sun, and may be found about 16° east of Regulus and slowly receding from the bright star. His conjunction with Mercury on the 13th has been referred to.

The moon, when three days old, is in conjunction with Saturn on the 7th, at 5 h. 21 m. A. M., being 3° 16' north.

The right ascension of Saturn on the 1st is 11 h. 9 m., his declination is 7° 34' north, his diameter is 15".2, and he is in the constellation Leo.

Saturn sets on the 1st at 8 h. 51 m. P. M. On the 31st he sets at 6 h. 47 m. P. M.

URANUS

is evening star. Keen-eyed observers will find him 6° east of Spica. His right ascension on the 1st is 13 h. 43 m., his declination is 10° 9' south, his diameter is 3".6, and he is in the constellation Virgo.

Uranus sets on the 1st at 10 h. 23 m. P. M. On the 31st he sets at 8 h. 25 m. P. M.

NEPTUNE

is morning star. His right ascension on the 1st is 4 h. 29 m., his declination is 20° 12' north, his diameter is 2".6, and he is in the constellation Taurus.

Neptune rises on the 1st at 0 h. 27 m. A. M. On the 31st he rises at 10 h. 31 m. P. M.

Venus, Mars, Jupiter, and Neptune are morning stars at the close of the month. Mercury, Saturn, and Uranus are evening stars.

Death of Two Noted Entomologists.

BY C. V. RILEY.

Henry Edwards.—Probably no entomologist who has died in recent years will be more sincerely mourned by a larger circle of friends than Henry Edwards, who died June 9, at his home in New York City. Mr. Edwards was a man of the most engaging qualities, was a well-known actor, and was one of the foremost entomologists of this country, where he has resided for many years. His collection of lepidoptera is almost unsurpassed, and he possessed, also, very large series in other orders. His collection was not strictly American, but included many thousands of specimens from other parts of the world, principally from Australia, where he lived for a number of years. He was not only a systematist of some note, but also a keen observer of the habits of insects, and a most enthusiastic lover of the biological phase of the science. His kindly nature and his great generosity were two of his most prominent characteristics.

Mr. Edwards was sixty years of age at the time of his death, having been born at Ross, Herefordshire, England, August 27, 1830. His early manhood was spent in London, where he became an amateur actor and subsequently a professional. He began the study of entomology while in London, and when, in 1853, he sailed for Australia, it was probably the entomological novelties to be collected in that then almost unknown country which attracted him quite as much as the chance of professional success. He remained in Australia twelve years, and then moved to California, where for twelve years more he was an actor and stage manager in the California theaters. During that period he collected as industriously as ever, and made one or more trips to Mexico, as described in a charming book of sketches published in 1878 under the title of "A Mingled Yarn." During his stay in California he was for some years president of the celebrated Bohemian Club, in San Francisco. He removed to Boston in 1878, and in 1879 to New York, where for a number of years he was connected with Wallack's theater. During this time he was president of the New York Entomological Club, and one of the founders and first editor of *Papilio*. In the summer of 1889 he went to Australia to fill a professional engagement, and returned to this country last fall. His death was due to the grip, followed by pneumonia and Bright's disease. Entomologists of the present generation will cherish his memory both for his lovable personality and for what he did as a scientific man. Those of future times will know him from his descriptive papers in lepidoptology. Perhaps the most useful work he has left behind him is his excellent catalogue of the described transformations of North American lepidoptera, which is indispensable to every student of North American insects.

I had the pleasure of meeting him only a few weeks ago with the Daly company at Washington. His appearance then greatly shocked me, and showed the severe illness which he had passed through. He was, in fact, at that time, unfit to be on the stage; yet he was hopeful and genial and pleasant as ever. The last article which he probably penned was published in the last number of *Insect Life* (vol. iii., pp. 384 to 386), on the early stages of *Cryptophasa unipunctata*. So far as I can learn, he left no will, and made no particular disposition of his magnificent collection. I also regret to learn that, as is so often the case with men of his generosity and devotion to art and science, he left little of this world's goods, so that his widow depends chiefly upon the insect collection which for so many years was at once his chief care and pleasure. It is of great scientific value, and its money value may be judged from the fact that for many years Mr. Edwards carried upon it an insurance of \$17,000. I hope and trust that it will remain in this country. There are few, if any, institutions as capable financially of paying its true value as the new Leland Stanford, Jr., University, and in no institution would it rest more appropriately, so large a number of the specimens having been collected in that State. I regret exceedingly that the National Museum has no funds wherewith to secure collections thus offered. The trustees of the Central Park Museum were thinking a few years ago of securing the collection, and Mr. Edwards offered it on favorable terms; but whether it remain in New York or go to California, the friends of the deceased will be glad to know that it remains in the country, and should do all they can to secure it here.

Jules Kunckel d'Hercule.—Most of your readers have already seen the announcement of the death of M. Kunckel d'Hercule, formerly president of the

Entomological Society of France, who is said to have died under the most distressing circumstances near the village of Sideriel, Algiers, while engaged in the investigation of the European migratory locust, early in May. The shocking report that he was attacked by a swarm of locusts while sleeping and destroyed by them, after desperate struggles to escape, is probably not warranted by the facts, although we have yet no definite information on the subject. The probabilities are that he was overcome by the heat, or died from heart disease or some other sudden and unexplained cause, and that subsequently the locusts alighted upon his body and devoured the exposed portions and parts of his clothing. It is a well known fact that when locusts are swarming in such enormous numbers they depart from their usual food habits and become more or less carnivorous. They have also been known, under these circumstances, to eat woolen cloth, and even to alight on the backs of sheep and eat the wool. D'Hercule was a very prominent entomologist and had done much good work. His selection by the French government to investigate the cause of the locust plague in Algiers was an eminently fitting one, and he had already published a preliminary report on the subject. He was a personal friend of the writer, who was his guest at dinner in the fall of 1887, when the locust question in Algeria was discussed in the light of the mission with which he was subsequently intrusted. How little either dreamt that it would end for him so tragically!

The Storage Battery Patent.

On July 23, an important decision in this matter was made by Judge Coxe, in the United States Circuit Court, New York, by which the Brush patents for the manufacture of storage batteries in the United States are made valid. The decision was filed in the case of the Brush Electric Company against the Electrical Accumulator Company.

The contest between the companies has been bitterly waged.

The Julien Electric Traction Company was sued for infringement by the Electrical Accumulator and the Brush Electric companies, and, in addition, the Brush Company also brought an action against the Accumulator Company. The first suit heard was that between the Electrical Accumulator and the Julien companies, and in that a decision was given in favor of the former. Immediately, however, the cause of the Brush against the Julien Company came on for hearing, and a decision was given whereby the defendant was enjoined from the use of its storage battery.

The Consolidated Electric Storage Company, successors of the Julien Company, bought the exclusive license in the United States for the Brush storage battery patents, and the cause of the Brush Company against the Electrical Accumulator Company was pushed. The decision of Judge Coxe awards to the Brush Company the exclusive right for the manufacture and sale of every type of modern storage batteries. In his decision the judge says: "Mr. Brush was the first in this country to make the broad invention. He is entitled to the fruits of his invention. It is the policy of the law to reward him."

The managers of the Fourth Avenue Railroad say they will immediately restore the storage battery cars to their Fourth and Madison Avenue lines. It is claimed that these cars have not, as yet, been run as cheaply as horse cars, on account of the cost and rapid deterioration of the batteries; but additional improvements are looked for, and it is thought economies will be effected in running to more than make the account even.

Coal Deposits in Westphalia.

During the annual meeting of the Society of Gas and Water Engineers, recently held in Strassburg, Herr Grassmann, mining assessor, of Saarbrück, read a paper on the production and consumption of Saar coal. He stated that the length of the district was 32½ miles and its breadth 9½ miles. The richness in coal was estimated at 565,000,000 square meters, and the quantity of coal was reckoned at 14,000,000,000 tons. The yearly production was 6,000,000 tons, so that if the present rate only was maintained, the deposits would last over 2,000 years. Dr. Brookmann, of Bochum, then read a paper descriptive of the Rhenish Westphalian coal deposits from a geological point of view. He said that 130,000 miners produced 36,000,000 tons of coal per annum in the Ruhr district. Although considerable beds lay in the ground, he was of opinion that they could not be worked at a greater depth than 1,000 meters, or say 3,250 ft., owing to the great danger. The thickness of the 138 layers in the Ruhr district was from ½ to 2 meters, but in case of three strata they were about 3 meters.

A GOOD recipe for making waterproof cement, to be used in constructing aquarium, is to take 25 parts gutta percha in shreds and melt it carefully. Add 75 parts ground pumice stone, and then mix in 150 parts Burgundy pitch and melt well together.