

**ASTRONOMICAL NOTES.**

BY BERLIN H. WRIGHT.

PENN YAN, N. Y., Saturday, August 31, 1878.

The following calculations are adapted to the latitude of New York city, and are expressed in true or clock time, being for the date given in the caption when not otherwise stated.

**PLANETS.**

Venus rises.....	H.M.	Saturn in meridian.....	H.M.
Jupiter in meridian.....	3 25 mo.	Neptune rises.....	1 31 mo.
Saturn rises.....	9 21 eve.		9 04 eve.
	7 34 eve.		

**FIRST MAGNITUDE STARS, ETC.**

Alpheratz in meridian.....	H.M.	Procyon rises.....	H.M.
Mira (var.) rises.....	1 25 mo.	Regulus rises.....	2 36 mo.
Algol (var.) rises.....	9 45 eve.	Spica sets.....	4 40 mo.
7 stars (Pleiades) rise.....	7 11 eve.	Arcturus sets.....	8 02 eve.
Aldebaran rises.....	9 31 eve.	Antares sets.....	11 42 eve.
Capella rises.....	10 50 eve.	Vega in meridian.....	10 01 eve.
Rigel rises.....	8 17 eve.	Altair in meridian.....	7 53 eve.
Betelgeuse rises.....	1 01 mo.	Deneb in meridian.....	9 04 eve.
Sirius rises.....	0 46 mo.	Fomalhaut in meridian.....	9 57 eve.
	3 02 mo.		0 14 mo.

**REMARKS.**

Saturn is rapidly increasing in brilliancy, and throughout the month of September will be the most brilliant and attractive body in the evening sky. A good 2½ or 3 inch telescope is necessary to exhibit well the charming and awe inspiring features of the Saturnian system. Such an instrument will show the three rings, the division between the outer and middle ones, the belts, four or five of the larger satellites, and the umbra and penumbra of the planet upon the rings. These last should be looked for only at or about the time of quadrature, and when the plane of the rings is most inclined to the earth's path. To observe the shadow of the rings upon the planet is far more difficult, but is most easily done when the planet is at or near quadrature, and the plane of the rings is not excessively inclined to the earth's path. With favorable atmospheric conditions during the latter part of September we think that the sixth and eighth satellites, Titan and Japetus, may be seen with a good opera glass. The middle ring is considerably brighter than the planet itself, while the interior one (Bond's dusky ring) is so transparent that the outline of the planet can be traced through it. The outer ring is of a grayish hue.

**Astronomical Notes.**

OBSERVATORY OF VASSAR COLLEGE.

The computations in the following notes are by students of Vassar College. Although merely approximate, they are sufficiently accurate to enable the observer to find the planets.

M. M.

**Position of Planets for September, 1878.**

**Mercury.**

On September 1 Mercury rises at 6h. 57m. A.M., and sets at 6h. 43m. P.M. On September 30 Mercury rises at 4h. 33m. A.M., and sets at 5h. 10m. P.M.

Mercury may be seen in the morning in the latter half of the month; it rises before the sun and at a point north of the sunrise point. On the 25th Mercury is very near Venus.

**Venus.**

On September 1 Venus rises at 3h. 24m. A.M., and sets at 5h. 31m. P.M. On September 30 Venus rises at 4h. 33m. A.M., and sets at 5h. 9m. P.M. the next day.

Venus will be small but brilliant all through the month.

**Mars.**

Mars is very distant, and its diurnal path lies very nearly with the sun; it will not be seen.

On September 1 Mars rises at 5h. 57m. A.M., and sets at 6h. 47m. P.M. On September 30 Mars rises at 5h. 38m. A.M., and sets at 5h. 34m. P.M.

**Jupiter.**

Jupiter is the most interesting planet at present. On September 1 Jupiter rises at 4h. 38m. P.M., and sets at 1h. 55m. A.M. of the next day. On September 30 Jupiter rises at 2h. 42m. P.M., and sets at 11h. 58m. P.M.

If we take the hour between 9 and 10 in the evening for observing Jupiter and its satellites, we shall find that the 1st satellite is invisible by being in Jupiter's shadow on the 1st and 24th of September; the same satellite is invisible at that hour, on the 8th and 15th, because it is behind Jupiter, and on the 18th, 23d, and 30th, because it is in transit across Jupiter's disk.

Taking the same hour for observing, the 2d or smallest satellite cannot be seen on September 2 because it is behind the planet, on the 11th because it is in transit across the planet, and on the 20th it may be seen coming out of the planet's shadow.

The 3d or largest satellite is invisible at this hour on the 10th, being in the shadow of Jupiter; it is invisible on the 17th because it is hidden by the body of the planet.

On September 9 the 4th satellite will not be seen during the evening; it is making its slow passage across the planet's face; a good telescope will show it like a white spot upon the planet.

**Saturn.**

On September 1 Saturn rises at 7h. 30m. P.M., and sets at 7h. 16m. A.M. of the next day. On September 30 Saturn rises at 5h. 31m. P.M., and sets at 5h. 11m. A.M. of the next day.

Saturn comes into its best position for observation in September; it rises so nearly in the east and is so steady in its light that it can be readily found. On September 12 Saturn is directly beneath the moon, and 7° distant, at midnight.

**Uranus.**

On September 1 Uranus rises at 4h. 45m. A.M., and sets at 6h. 12m. P.M. On September 30 Uranus rises at 3 A.M., and sets at 4h. 22m. P.M.

**New Inventions.**

Messrs. John H. Carrier, Barton R. Baker, and William McCarty, of London, Ky., have patented an improved Washing Machine, in which a revolving tub and reciprocating pounder are both operated simultaneously by belt and pulley mechanism.

Mr. José R. Villasana, of New York city, has patented an improved Cigarette Holder, by which the unrolling of the cigarette and the dropping of the same are prevented, and by which the cigarette may be placed on a table or desk without burning any part thereof, and it may be smoked while the hands may be used for other purposes.

An improved Sap Bucket has been patented by Mr. Albert E. Ware, of Hancock, N. H. The object of this invention is to so shape the corner pieces of sap bucket covers that they will serve the twofold purpose of a clasp and an emptying spout.

Mr. Ivy J. Hart, of Chandler, Ind., has patented an improved Wagon Jack, which consists in a novel construction, arrangement, and combination of a standard, a slide, and a lever, and certain details in connection therewith, whereby a jack is produced which is cheap, simple, strong, easily adjusted and operated, and occupies but a small space when not in use.

Mr. George Blatchford, of Mitchell, Ontario, Canada, has patented an improved Resonant Chamber for Organs. It will produce a more distinct and perfect vibration of the chamber, also a more solid and distinct volume of sound, and a more perfect control of the sound is secured, so as to produce a crescendo or diminuendo at will, and with less effort than in resonant chambers of ordinary construction.

Mr. Edward Row, of Indiana, Pa., has patented an improved Fire Escape, having rings or footholds, which may be made elongated, elliptical, triangular, or rectangular. The links for connecting the rings may be made of hoop iron or of round iron flattened at the ends.

Mr. Robert F. Roche, U.S.A., stationed at Fort Foote, Md., has patented an improved Adding Stick. The invention consists of a stick or ruler made in the shape of a polygon or cylinder in cross section, on the periphery of which numbers from zero upward are written consecutively in two spirals, whereby from certain movements of the thumb thereon in accordance with a known key, a column of figures may be accurately added without mental effort, and without danger of forgetting the aggregate amount of a portion of a column if attention should be called from the work.

Mr. Robert W. Tavener, of West Bay City, Mich., has patented an improved Measuring Faucet. This invention relates to an improved self-closing and liquid measuring faucet. The device consists of two parts, a transparent graduated measuring vessel, and a faucet proper, the two being so connected that liquid is received into said vessel through the faucet direct from the source of supply; and, the quantity being thus ascertained, it is discharged from the vessel back into the faucet, from which it escapes into any receptacle provided for it. The induction and exit orifice of the measuring vessel are one and the same. The faucet has two valves, which are so arranged that the orifice or passage through which the liquid enters and escapes from the measuring vessel is closed simultaneously with the opening of the discharge orifice in the faucet, and vice versa.

Mr. Charles H. White, of Danbury, Conn., has devised an improved Form for use in giving Shape to the Brims of Hats when the side parts of the said brims are turned or rolled, to enable the hats to be removed from the form without bending or warping their brims or changing their shape, so that the hats will set or stiffen with their brims in the exact shape given them by the form.

Mr. Nathan Scarritt, of Kansas City, Mo., is the inventor of an improved Horse or Rack for Airing Clothes after they have been ironed, and for drying clothes, which, when extended, will furnish a large amount of drying surface, which may be folded into small space for storage and transportation.

Mr. John Corbin, of New Harmony, Ind., is the inventor of a Machine for Drying Grain, Flour, Meal, Malt, Sugar, and similar articles by the use of steam. The invention consists of a revolving hollow center shaft having steam supply and exhaust pipes, in connection with a fixed hollow ring and hollow radial arms at one end of the shaft, and with a loose adjustable hollow ring applied by hollow arms and a sliding hub to the shaft. The loose ring is connected by flexible pipes with the center shaft, and the rings and arms are longitudinally connected by steam pipes jointed thereto, and finally inclosed by an outer cylindrical drum or jacket.

An improved Candlestick has been patented by Mr. William Yeung, of Easton, Pa. The object of this invention is to furnish a candlestick of simple and substantial construction, adapted to a chimney which will shield the candle from gusts of wind and prevent the flying off of sparks.

An improved Vehicle Spring Brace has been patented by Mr. Edwin R. Wheeler, of Merrimac, Mass. This invention relates to an improved device for hanging the body of carriages having a so-called "cut-under" or wheel house, such as a common rockaway, extension-top phaeton, coupé-rockaway, etc., so that one or more elliptic springs may be used, and the ordinary perch or platform gearings be dispensed with.

Mr. Walter F. Cranston, of West Middleburg, O., has patented an improved Coffee and Peanut Roaster for the use of dealers, farmers, and others, for roasting coffee and peanuts

for retail or for private use, which will enable the coffee and peanuts to be roasted evenly and quickly, and prevent the smoke and odor from escaping into the room.

Mr. Joel Northrup, of Otisville, N. Y., has patented an improved Boot and Shoe. This invention consists in a tongue made of leather, elastic fabric, or other suitable material applied to a shoe or gaiter of any ordinary description, whereby provision is made for fastening the shoe in lieu of lacing it, for covering and protecting the joint where the edges of the shoe upper meet, and for allowing the shoe to yield and accommodate itself to the motion of the foot, so as to afford comfort to the wearer.

Mr. August Moll, of Brooklyn, N. Y., has patented an improved Star Braid. This invention relates to improvements in that kind of trimming braid known in the market as "star" braid, being mainly intended to simplify, facilitate, and cheapen the manufacture of star braid, so that it can more successfully compete with the imported article.

Messrs. Albert Whiting and Joseph A. Smith, of Rochester, N. Y., have patented an improved Machine for Raising Leather from Tan Vats. By means of this device the leather may be easily and quickly removed from the vats. It consists in the rack or false bottom, made in two parts or sections, hinged to each other at the center, to adapt it to be raised at the center into an angular position to raise and support the hides.

**Horse Biscuits.**

The Prussian military administration, after the close of the Franco German war, established at great expense an experimental station at Nancy for the army of occupation, designed for making trials, technically and scientifically, in regard to foods which maybe used by troops in a general way or under particularly difficult circumstances. The direction of the factory created with this intention was confided to M. Gustave Warnecke, of Frankfort-on-Main.

In the different manufactures and experiments that were made there, special attention was paid to the alimentation of horses, since these animals had been of such decisive importance in the different periods of the war of 1870-71.

After long and laborious gropings in the dark, Warnecke's "biscuits for horses" were finally produced. These, after a very severe trial on a large proportion of the horses belonging to the army of occupation, are admitted to be a great success. The "biscuit for horses," or, as it has been also called, the "oat comfit," consists of 30 parts of oat flour, 30 parts of "dextrinated" pea meal, 30 parts of rye flour, and 10 parts linseed meal; or, 40 parts of oat flour, 40 parts of dextrinated pea meal, and 20 parts of linseed meal; or, 20 parts of pea meal, 20 parts of wheat flour, 20 parts of corn meal, 20 parts of rye flour, 10 parts of grated bread, and 10 parts of linseed meal; or, finally, other analogous mixtures.

As the result of minute experiments it is stated that 4 pounds of these mixtures, well cooked, possess a nutritive value equal to that of a large ration of oats of about three times the weight. So the Prussian administration of the army of occupation, taking the results observed by the cavalry officers and the veterinary surgeons as a basis, admits that 3½ pounds of "oat comfits" are worth 12 pounds of oats. Experiments also demonstrated that horses fed on 12 pounds of oats did not support the fatigue to which they were submitted so well as those that received the 3½ pounds of comfits.

A result so brilliant, and one so favorable to the rapid movements of cavalry, could not remain ignored by other great military powers. The inventor, called to St. Petersburg, manufactured in that city, according to the above formulas, ten thousand rations of horse biscuits, which were submitted, in the cavalry and the Cossacks of the Guard, to experiments still more minute than those of the Prussian army. The horses were fed on the biscuits during twenty-six days (in Prussia ten days only); and every day notes were made of the state, plumpness, and weight of the horses, and their strength tested with the dynamometer. The superiority of the comfits over oats (a third of which are undigested and lost in the dung heap) was so marked that they were adopted, not only in imitation of Prussia, as an exceptional recourse for times of war, but also as a steady food in time of peace. The best recommendation that the new invention possesses is that the troops eat more of the biscuits than the horses. To put an end to this practice the Prussian administration was obliged to order five per cent of lupin flour to be mixed with the materials of the biscuit.

A ration is, as has already been stated, about 3½ pounds; it comprises from 25 to 30 biscuits of from 4 to 5 inches in diameter by four tenths of an inch in thickness. These biscuits, strung on wire, can be suspended to the saddle without danger of breakage, and a horse can thus easily carry nourishment enough to last him four or five days. They are given, either dry or wet (after having been broken up), at the rate of 7 in the morning, 12 at noon, and 7 in the evening.

**American Institute Exhibition.**

The interest evinced in the coming exhibition of the Institute is practically proven by the demand for space, and by the improved character of the exhibits offering. The managers state that the promise of a fine display never was better, and that although business is generally dull and the manufacturing industries are generally depressed, nevertheless the outlook is hopeful and encouraging. For all details address the General Superintendent, room 22, Cooper Union Building, New York.