

## ASTRONOMICAL NOTES.

OBSERVATORY OF VASSAR COLLEGE.

For the computations (which are approximate only) and for the observations in the accompanying notes, I am indebted to students. M.M.

## Positions of Planets for January, 1874.

## Mercury.

Mercury should be looked for in the morning, in the early part of the month, as it rises before the sun, at 6h. 12m. on the 11th, and sets at 3h. 15m. P. M.

On the 31st it is very near the sun in right ascension, passing the meridian eight minutes after noon, rising at 7h. 23m. A. M., and setting at 4h. 53m. P. M.

## Venus.

Venus is not well situated at the beginning of the month, and becomes less so at the end, as it passes the meridian within a few minutes of noon on the 31st.

On the 1st Venus rises at 6h. 38m. A. M., and sets at 3h. 36m. P. M. On the 31st Venus rises at 7h. 7m. A. M., and sets at 4h. 37m. P. M.

## Mars.

The apparent diameter of Mars is becoming less. It comes to meridian earlier in the afternoon from the 1st to the last of January; but as it is moving northward in declination, it is longer above our horizon and so sets a little later.

January 1, Mars rises at 1h. 12m. A. M., and sets at 8h. 42m. P. M. January 31, Mars rises at 9h. 5m. A. M., and sets at 8h. 43m. P. M.

## Jupiter.

Jupiter is coming to a position more favorable, and rises on the 1st at 11h. 18m. P. M. Its apparent motion among the stars is very slow on the 1st, and on the 16th it seems to be stationary; after this time its motion among the stars is reversed, and it seems to retrograde, or move in a westerly direction, in consequence of the more rapid motion of the earth.

On the 31st Jupiter rises soon after 9 P. M., and is very nearly in the path of the celestial equator, being above the horizon a little more than 12 hours. It comes to the meridian on the 31st at 3h. 26m. in the morning, and is then at an altitude (in this latitude) of 49° 6'.

## Saturn.

On the 1st Saturn rises at 8h. 50m. A. M., and sets at 6h. 18m. P. M. On the 31st Saturn rises at 7h. 4m. A. M., and sets at 4h. 38m.

It will be believed that Saturn is not well situated for observation, its daily path being very far south, and its position nearly the same as that of the sun throughout the month.

## Uranus.

Uranus rises on the 1st at 6h. 53m. P. M., and sets at 9h. 15m. A. M. On the 31st Uranus rises at 4h. 48m. P. M., and sets at 7h. 13m. A. M. It is among the small stars of *Cancer*.

## Neptune.

Neptune rises 22m. after noon on the 1st, and sets at 1h. 20m. the next morning. On the 31st it rises at 10h. 26m. A. M., and sets at 11h. 24m. in the morning.

## Sun Spots.

Cloudy weather has seriously interrupted the record of sun spots by photography. Since November 14, impressions have been obtained only on the 22d, 25th, 26th, and 29th of November, and on the 6th of December. Three small groups near the western limb appeared on the 22d, none of which could be referred to any group of the 14th. By the 25th they had disappeared and a pair of small spots was found occupying about the same place as those of the 22d. This pair was also seen in photographs of the 26th and 29th, being on the latter day a very short distance from the western limb. The picture of the 26th shows a large spot just at its entrance on the disk. This was also visible on the 29th, the sun's rotation having carried it further toward the center. On December 6 there was a fine cluster approaching the center, and a smaller one below the larger and nearer the eastern limb. A spot near the western limb seemed by its position and shape to be identical with the large one of the 26th and 29th, and, if so, was unusually invariable. Faculae have been visible in every case, but not of remarkable extent.

## Barometer and Thermometer.

The meteorological journal from November 16 to December 13 gives the highest barometer, December 2 and December 7, 30.57; the lowest barometer, November 18, 28.68; the highest thermometer, December 4, at 2 P. M., 55°; the lowest thermometer November 20, at 7 A. M., 6.5°.

## Amount of Rain.

The sleet and snow which fell between the evening of November 23 and the morning of November 25 amounted to 2 inches.

The rain which fell between the evening of December 8 and the afternoon of December 9 amounted to 0.75 inches.

The rain which fell between the afternoon of December 11 and the afternoon of December 13 amounted to 1.575 inches.

## Old Fruit Cans.

Empty tin fruit cans, like old hoop skirts, are a nuisance when out of place. The question is: What is their place? and I should be willing to answer it a hundred times, if I could banish them from the gutters, the ash heaps, the vacant lots, and, above all, from the hands of the boys. I shudder now at the very suggestion of their ever being used again as music boxes, strung with rosined chords. Did that epidemic visit your locality, my dear reader? If so, you would be in haste to prevent the slightest possibility of its recurrence. But to the remedy.

In the first place, to open the cans properly, put hot coals

on and around the little soldered tip on the top, until the solder melts, then scrape off lid and coals together, with a table knife. Be careful, however, not to set the cans on the hot stove before they are opened, by which little neglect steam enough to burst the can might be generated, which would not be a very pleasant or profitable method of opening it. When opened properly, you have a smooth, round orifice through which to remove the fruit.

When the cans are empty and dry, invert them on hot coals in the stove for half a minute, or on a hot stove, until the solder melts and loosens the remaining top of the can; then strike it off, smooth off the bits of solder, and you have a very convenient cooking utensil. For a lid, use a saucer, or the covers to old tin pint cups or pails. Rice, wheat, sump, pearl barley, split peas, and many other dishes for a small family, and small dishes for a large family, can be cooked in them, either standing directly on the stove, or placed in a large boiler or saucepan of water, to prevent the possibility of their burning. It also saves more costly tin utensils; for this method of boiling in water is hard on the tin ware. One can may be kept for onions; others can be used for baking or steaming rye and Indian bread, and some kinds of pudding.

They are also convenient for pantry use, for holding articles to be used in cookery or in the laundry; for garden seeds, for paint pots, and for many other things that will suggest themselves to every housekeeper, and for which indeed they would long ago have been used but for the untidily jagged edge made by the common method of opening them. If covers are wanted for them in these capacities, discarded rims and lids may be put together with a little solder.

If there are tin shears at hand, and any one to use them, the cans may be made into very passable scoops. Take several of them at a time to a tinner, and he will cut them into the shape for a trifle. It saves time to have a scoop in every meal tub, flour barrel, sugar pail, and starch box. In short, old tin cans are far better for many purposes than for street organs, or for ornaments to dogs' tails. Suppose we change the tune, and have better economy, more and a higher grade of music.—*Science of Health*.

## What a Scientific Englishman thinks of Scientific Americans.

Mr. R. A. Proctor, the eminent English astronomer, is now in this country, and, in a recent speech before the Lotos Club in this city, made the following interesting remarks:

He had known before he had arrived, and had more clearly recognized since, that American scientists were doing noble work, and that the people of America were in advance of Europe in the general attention given by them to science. He had been amazed by the character of the audiences before whom he had lectured, not solely by their number, though that had surprised him, but by their close attention to the facts presented to them, and by their appreciation of the bearing of those facts. He had visited also American colleges and other institutions, and had been struck by the great advantages which the methods there employed possessed over those adopted in England. He had strongly felt the hope that one day his own children might receive a portion of their education in America. He proceeded to remark that, to every thinking mind, America presents a deeply interesting subject of study. There are being worked out, in this great country, the great problems which occupy the attention, indeed, of statesmen and politicians on the other side of the Atlantic, but the solution of which there, if solution is to be hoped for, is trammelled by the influences of old traditions, by the effects of class distinctions, and by other circumstances not readily classified or analyzed, but operating only too effectually to retard progress. Even in science the difference was to be recognized. He could venture, indeed, to remark that he might to some degree claim the sympathy and support of American thinkers, because of the efforts which he had made to resist the influences which oppress science in England. One of these is "authority"—not authority in its legitimate sense, but authority unduly allowed to affect the freedom of thought. Here in America men of science recognize authority as a form of scientific evidence, because the fact that a great thinker has held such and such a view is *pro tanto* evidence in favor of the justice of the view. But Americans refuse to allow authority to decide scientific questions; and when newly discovered facts show that views firmly held by great authorities should be modified or abandoned, the American student of science is not prevented by undue respect for authority from accepting the new truths thus indicated. In this respect, he had himself thought and acted as an American would. His so doing had, he feared, proved displeasing to many in England, who preferred to stand on the old ways. Even more unpleasant to many had been his opposition to the old fashioned notion that only the official astronomer can do effective work, either in observation or in the discussion of observations. He mentioned how the Astronomer Royal of England had embodied this feeling in the opening sentences of a well known work on popular astronomy, where he divided astronomical students into those who are "officially connected with Government observatories, and those who are not." Mr. Hind had once rebuked him (Mr. Proctor) for quoting an observation made by an amateur astronomer, not that Mr. Hind denied that the particular fact had been noted, but because the gentleman who had made the observation had not made for himself a great scientific name. This, Mr. Proctor remarked, appeared to him a most mischievous mistake; and he believed that science in any country would never make such progress as it might, so long as considerations such as this were allowed to operate. He quoted another illustration of the tendencies of the offi-

cial mind. When Miss Mitchell, the distinguished American astronomer, had discovered a certain comet, the Astronomer Royal (one of the council who had to determine whether she should receive a gold medal for that achievement) opposed the award because, "although Miss Mitchell had certainly discovered the comet, she had not sent news of the discovery by the first mail." [Laughter.] Fortunately the Astronomer Royal was overruled by his colleagues and the award was made. Mr. Proctor proceeded to remark on two points in connection with American scientific work—first, the effective way in which it was carried on, new and important facts being continually added to our knowledge by American scientific workers; and secondly, the small regard paid by Americans to questions of priority. He remarked that, in two special instances, relating to the work of Professors Cooke and Winlock, of Cambridge, Mass., he had been unwittingly guilty of injustice in assigning the credit to others; and the mistake, though noted long since by those gentlemen, had been allowed to remain uncorrected. It appeared to him, in fact, that American students of science were altogether less disposed to controversy than their European fellow workers.

[Miss Mitchell has since explained that the medal was to be awarded, according to the terms prescribed by its donor, the late king of Denmark, only on condition that the news of the discovery be forwarded by the first mail.—EDS.]

## The Automatic Telegraph System.

This system is being tested by the Philadelphia, Reading and Pottsville Telegraph Company, and found to work very satisfactorily between their main offices in Philadelphia, Reading, and Pottsville, upon a line which also has a number of offices using the Morse system.

On Tuesday, the 2d inst., the Automatic Telegraph Company's wire between Washington and Philadelphia was connected at Philadelphia to one of the P., R., and P. Telegraph Company's wires between Philadelphia and Pottsville, and the President's message, containing about 11,500 words, sent direct from Washington to Pottsville, Pa., by the automatic system; and the time occupied in its transmission upon a single line between the points named was 34 minutes, being an average of 337 words per minute. It could, however, have been sent in less time, as no effort was made at the time to obtain speed. The message was perforated at Washington by young ladies, who each averaged about 25 words per minute. The characters recorded on the chemical paper at Pottsville were plain and distinct, and easily read by three operators, who translated the characters to three copyists, each averaging about 35 words a minute.

Upon the same day, the President's message was transmitted over the lines of the Western Union Telegraph Company direct from Washington to Pottsville, by the Morse system; and according to a statement published in the *Pottsville Standard*, it occupied the time of four wires each for nearly two hours and a half.

Had the message been sent by the Morse system upon a single wire between the points named, it would have taken about 10 hours, as there was considerable escape on the wires that day, owing to a damp and drizzling rain.

## The Bee Keeper's Convention.

The third annual convention of the North American Bee Keeper's Society, recently held at Louisville, Ky., was very sparsely attended, the delegates present being 18 in all, an unaccountably meager representation, as compared with the large meetings of the two previous years. There was an informal talk of broad comb and its probable formation; one member related his loss of thirty colonies in consequence of the singular disappearance of the queens, owing, it was thought, to a disease generally prevalent during the year, and which proved particularly fatal to the queens, killing them a short time after the attack. A general expression upon the subject showed a unanimity in favor of sugar sirup, or pure white candy, in preference to late fall honey as food for weak swarms in winter, and one member advised that it be prepared by dissolving a quart of "coffee crushed" in a pint of boiling water. Alsike clover was very highly recommended, some deeming it superior to the white or red, not only as bee pasturage but for cattle feed as well. A remark was made to the effect that the consumers may easily be in error when they suppose that the presence of comb in the honey sold in the market is a sufficient guarantee of excellence, and that extracted honey is necessarily adulterated, it being a trick of the trade to place comb in manufactured honey in order to help the sale of the worthless article.

PROFESSOR PROCTOR, the English astronomer, treats largely upon the probabilities of other worlds than this being inhabited, the conclusion being that, of the inner planets, Mercury, Venus, the Earth, and Mars, our planet only was in condition to be inhabited by beings like the dwellers upon the earth. Mercury and Venus must be too hot, and Mars too cold. Of the other planets, their condition was not probably such as to permit of habitation by creatures such as ourselves.

D. K. N. suggests, in the laying of ocean cables, that communication between the deep sea line and floating buoys, all along the route, be arranged. A ship in distress could, by sending a boat and crew to one of the buoys, send word to the shores for help. The idea is practical, and will probably be some day carried out.

J. H. M. writes to point out the fact that an acre is the square of the hypotenuse of a right angled triangle whose sides are, respectively, 66 feet and 198 feet, or 4 rods and 12 rods.