trees The species in question was *Panesthia Javanica*, from the abdominal brood pouch of the female of which he had extracted young white specimens of 6·5 mm. in length; and these, from their being already provided with legs, antennæ, black eyes, and the full number of already hard tipped gnathites, as well as from their size, he judged were just on the point of birth when the mother was thrown into the alcohol. He further suggested that the curious and as yet unexplained habit evinced by several European species of cockroaches (*Blattidæ*) of carrying their egg capsules about with them for a week, or even for so long a period as a fortnight, before depositing them, might possibly be explicable as the retention of a vestige of a lost viviparous character.

### Astronomical Notes.

OBSERVATORY OF VASSAR COLLEGE.

The computations in the following notes are by students of Vassar College. Although only approximate, they will enable the ordinary observer to find the planets.

M. M.

#### Positions of Planets for January, 1879.

#### Mercury.

On January 1 Mercury rises at 6h. 20m. A.M., and sets at 3h. 47m. P.M. On January 31, Mercury rises at 6h. 16m. A.M., and sets at 3h. 23m. P.M.

Mercury can be seen only in the morning. On the 16th it will be in its best position, and will rise about 6 A.M. It can probably be seen in the southeast.

#### Venus.

Venus will not be seen in the early part of the month. On January 1 Venus rises at 8h. 2m. A.M., and sets at 5h. 2m. P.M.

On January 31 Venus rises at 8h. 3m. A.M., and sets at 6h. 16m. P.M. Venus and Jupiter will be nearly in the same position on the evening of the 23d.

#### Mars.

On January 1 Mars rises at 4h. 52m. A.M., and sets at 2h. 11m. P.M.

On January 31 Mars rises at 4h. 36m. A.M., and sets at 1h. 32m. P.M.

It will be seen that Mars can be visible to the eye in the early morning only; like Mercury, it rises south of east.

#### Jupiter.

Jupiter sets early all through the month. It rises on January 1 at 9h. 17m. A.M., and sets at 7h. 1m. P.M.

On January 31 Jupiter rises at 7h. 39m. A.M., and sets at 5h. 39m. P.M. Jupiter and Venus have nearly the same position on January 23.

#### Saturn.

Our distance from Saturn is increasing, and the planet is less conspicuous, but is readily found as soon as the daylight is out. It passes the meridian on January 1 a few minutes after 5 P.M., and on the 31st at 19m. after 3 P.M., at an altitude of 45° to 46°. Saturn sets on the 1st at 10h. 57m. P.M., and on the 31st at 11m. after 9 P.M.

The satellite Titan can be seen with a small glass. On December 14 this satellite was seen far on the left of the planet (with an inverting telescope), and as it repeats its journey in sixteen days, it will be found in that position again on the 30th, and again on January 15.

The smaller satellites of Saturn can be seen only by the aid of large telescopes. At times six of the moons are seen surrounding the planet, sometimes lying along its path and sometimes grouped together around the tips of its ring.

#### Uranus.

The distant planet Uranus rises on January 1 at 8h. 59m. P.M., and sets at 10h. 17m. of the next morning. On January 31 Uranus rises at 6h. 56m. P.M., and sets at 8h. 17m. A.M. of the next day. This planet, which was at one time near Regulus, is now near the star Rho Leonis.

#### Neptune.

On January 1 Neptune rises at 52m. after noon, comes to meridian at 7h. 40m., and sets at 2h. 20m. the next morning. With small telescopes it can be seen as a star. As it comes to the meridian about 4m. earlier every evening, it is not likely to be seen even as a star after the middle of the month.

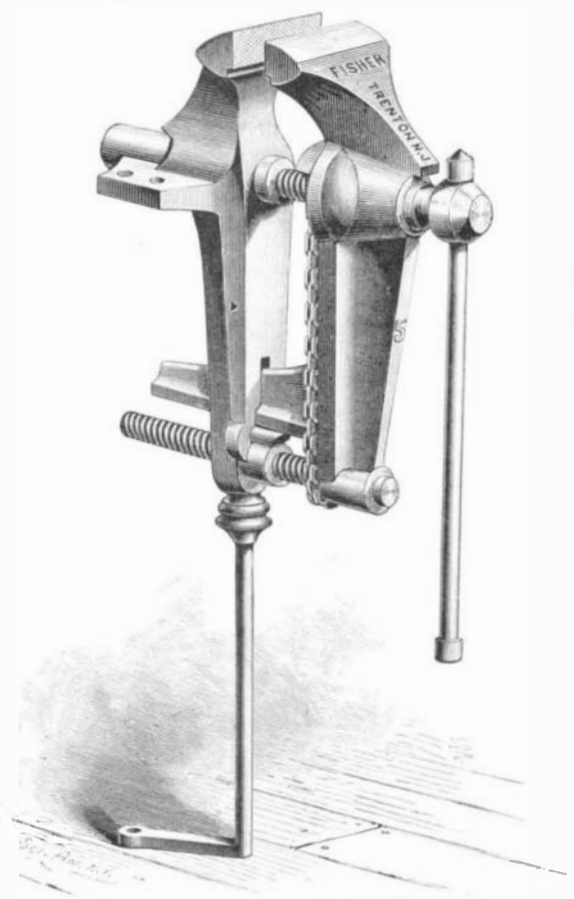
### Proportions of Hulls, Engines, and Boilers of Yachts.

The following table, giving dimensions of hull and machinery as proportioned by a well known builder of steam yachts, contains particulars which will be of interest to many of our readers:

| HULL. | | | | ENGINE. | | | | | BOILER. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Length over all. | Beam. | Draught. | Tonnage, carpenter's measurement. | Nominal horse power. | Diameter of cylinder. | Stroke. | Diameter of propeller. | Pitch. | Diameter of shell. | Height of shell. | Heating surface. |
| ft. | ft. in. | ft. in. | tons. | | in. | in. | in. | ft. | in. | in. | sq. ft. |
| 25 | 5 8 | 2 3 | 4 | 2 | 3 | 5 | 26 | 3 | 28 | 45 | 75 |
| 28 | 5 10 | 2 4 | 5 | 3 | 3½ | 5 | 28 | 3 | 30 | 46 | 90 |
| 32 | 6 4 | 2 6 | 6 | 4 | 4 | 6 | 30 | 3½ | 33 | 48 | 115 |
| 38 | 7 6 | 3 2 | 10 | 6 | 5½ | 7 | 36 | 4 | 36 | 56 | 170 |
| 50 | 9 | 3 6 | 16 | 10 | 7 | 9 | 42 | 5 | 46 | 76 | 246 |
| 60 | 10 | 4 2 | 26·5 | 15 | 9 | 12 | 48 | 5 | 50 | 82 | 332 |
| 68 | 11 | 4 8 | 37·5 | 20 | 10 | 12 | 54 | 6 | 54 | 86 | 402 |
| 75 | 12 | 4 10 | 43 | 30 | 12 | 12 | 56 | 7 | 60 | 90 | 504 |

### DOUBLE SCREW PARALLEL VISE.

We give herewith an engraving of a new parallel "leg" vise, manufactured by Messrs. Fisher & Norris, of Trenton, N. J. The movable jaw of this vise is supported by an arm that passes through a mortise in the stationary one, and it is operated by two screws which are connected by an endless chain, each screw being provided with a chain wheel, so that when the upper screw is moved by the handle the lower




FISHER & NORRIS' PARALLEL VISE.

screw moves simultaneously with it, thereby insuring the parallelism of the jaws.

We are informed that the jaws are of the best tool steel welded on and properly cut and hardened, and that the screws and thread boxes are of the best refined iron, the latter being "solid cut." These vises are either with or without a swivel attachment.

NEW SAMPLE PACKAGE FOR THE MAILS.—A mail package, composed of tin, has been approved by the Postmaster General, for the transportation of samples of flour, bran, sugar, needles, nails, etc. The package has a clasp; there is no danger of its self opening in the bags, while the contents can be readily inspected.

## Correspondence.

### The Supposed Volcano in the Moon.

*To the Editor of the Scientific American:*

The account, in your issue dated the 21st inst., of the supposed volcano in the moon, seen by Mr. John Hammes, calls to mind a theory I had some years ago, namely: meteors fall, of course, upon the moon as well as upon the earth, but the moon having no atmosphere, they reach its surface with their full cosmical velocity. If a meteor as large as some that have reached the earth should strike the moon the heat developed would turn the meteor to vapor, and an astronomer on the earth that chanced to have his telescope pointed that way would observe phenomena similar to those seen by Mr. Hammes. SAMUEL P. GARY.

Oshkosh, Wis., December 14, 1878.

### A Fast Little Side-Wheeler.

*To the Editor of the Scientific American:*

In your issue of November 23, I was interested in the statement made by S. Firth, of Auckland, N. Z., in relation to his steam launch, and as my experience has been the opposite to his, in relation to vertical boilers, I thought it might be of interest to some of your readers.

I built a small side-wheel boat, 26 feet long and 5 feet 8 inches beam, flat bottom, with fine lines fore and aft, and depth of hull 2 feet. The paddle wheels are 4 feet 8 inches in diameter and 24 inches wide, being connected to engine by gearing—proportion, 5 to 1. The engine is horizontal, 4 inch bore and 6 inch stroke, cutting off at ¾ stroke. The average number of revolutions of engine is 300, with 100 lbs. of steam. The boiler is 36 inches high and 22 inches diameter, containing 91 flues 24 inches long by 1 inch diameter, and a fire box 18 inches diameter by 12 inches high.

I have raised 5 lbs. of steam in 20 minutes from cold water, and with anthracite coal, nut size. This boiler furnishes ample steam, with exhaust draught. The boiler never foamed any, excepting once or twice when first used, which was caused by oil being used in drilling holes for rivets, and considerable remaining inside.

This boiler performed so well that many have remarked its good qualities. Last winter the boat was lengthened 10 feet, and the wheels enlarged to 5 feet 8 inches diameter and 28 inches wide each. The boat draws 7 inches, and will carry 20 persons, drawing about 12 inches. She easily makes a mile in 8 minutes, and I think that compares well with many steam launches using the same power. Our river is shallow, which prevents our using a screw. Sometimes we can get only 14 inches of water in many places. In going through rapids we have used steam as high as 110 and 120 lbs., but never has the boiler failed in any particular.

I think the trouble with Mr. Firth's boiler was that it was too small for his engine. My experience inclines me toward the vertical boiler for this kind of purpose. I hope my experience may benefit others who can use only side-wheel boats. C. A. THOMPSON.

Owego, N. Y., Nov. 27, 1878.

### Curiosities of Botany.

*To the Editor of the Scientific American:*

In the article on the "Proceedings of the Torrey Botanical Club," published in your issue of December 7, mention is made of a "full blown rose" from the center of which another perfect flower was growing. I wish to state that two roses were found last summer growing on the same bush, one having a cluster of five perfect buds raised on a stem from its center, and the other three.

A species of Allium was found in which the stamen, in a flower otherwise normal, was replaced by a bulblet; also in another flower one of the stamens was replaced by a perfect flower.

An ear of corn, which has grown wrong side out, is in my possession. The ear has the form of an inverted truncated cone, bearing the kernels on the walls of the hollow. The cob has a smooth exposed surface, and a texture somewhat more compact than the cob of normal ears.

Arkansas Industrial University, Fayetteville, Ark.

F. LEROY HARVEY, Prof. of Botany.

### Pure and Unadulterated Baking Powders.

Believing that inestimable good will result to the public from the questions lately raised in the columns of your paper in regard to the healthfulness of certain articles used in the preparation of food, we think you will not hesitate to crown your efforts by pointing to goods of marked purity and reliability.

Cleveland's Superior Baking Powder, manufactured at Albany, N. Y., has, during the past nine years, gained a widespread popularity, and very many of your countless readers will be glad to know that it is approved and recommended for purity and healthfulness by such eminent chemists as the following:

NEW HAVEN, CONN., December 7, 1878.

Messrs. Cleveland Brothers,

911 and 913 Broadway, Albany, N. Y.:

This certifies that I have recently purchased of several grocers in this city packages of your "Superior Baking Powder," have submitted their contents to chemical analysis, and have found them to consist only of very pure and entirely wholesome materials, very suitably combined for this purpose. They contain no other acid than that of the purest grape cream of tartar, and are completely free from alum or any other deleterious or doubtful substance. They are, as to their composition, in all respects what you claim.

S. W. JOHNSON, Ph.D.,
Professor of Chemistry in the Sheffield Scientific School of Yale College; Director of the Connecticut Agricultural Experiment Station.

HOBOKEN, N. J., December 11, 1878.

Messrs. Cleveland Brothers, Albany, N. Y.:

I purchased a package of Cleveland's Superior Baking Powder of Messrs. Park & Tilford, in New York, and have made a careful analysis of the same. I find it to consist of pure cream of tartar, mingled with such other ingredients as render it an effective and desirable baking powder; and that it does not contain any alum, terra alba, or any adulteration whatever. It is, in my estimation, among the most wholesome compositions for a baking powder of which I have any knowledge. HENRY MORTON, Ph.D.,
President of the Stevens Institute of Technology.

NEW YORK CITY, December 12, 1878.

Messrs. Cleveland Brothers, Albany, N. Y.:

The results of a complete analysis on several packages of your Superior Baking Powder, purchased by myself of grocers in this city, confirm the fact that it is made of pure and healthful materials, well manufactured, and it is in every particular reliable and most wholesome. Having had the examination of the materials used in manufacturing your powder for many years, it affords me pleasure to recommend it without reserve. WM. M. HABIRSHAW, F.C.S.,
Analyst for the Chemical Trade of New York; Chemist of the New York State Agricultural Society; Analytical Chemist to the New York Produce Exchange.

WEST PHILADELPHIA, PA., December 7, 1878.

I have made a very careful analysis of "Cleveland's Superior Baking Powder," bought from grocers in this city, and have found it to be perfectly pure, and manufactured from the best quality of cream of tartar and other materials. It is entirely free from alum, acid phosphates, terra alba, and other substances which are frequently used for the manufacture and adulteration of baking powders; and on account of its purity and healthful constituents, deserves to be highly recommended. F. A. GENTH, Ph.D.,
Professor of Chemistry and Mineralogy in the University of Pennsylvania, Philadelphia, Pa.