

the injury which it caused, there were writers who, not content with the simple facts, went much further and asserted that this little insect must also be the cause of mildew, rot, etc. Professor Cook has jumped to similar false conclusions, and has, during the present winter, promulgated before various societies his belief that the phylloxera is the cause of black rot in grapes. This is sensation, not science, and it is to be deplored, coming from the source it does. The phylloxera occurs in most grape-growing sections of the country east of the Rocky Mountains, and will quite naturally be found on vines on which the fruit has rotted.

"But an experience covering several years, and the examination of hundreds of vines, with rot of fruit and without it, enables me to deny the assertion that the insect is more numerous on the former than the latter. The phylloxera disease has its own peculiar characteristics, which are at once distinguished from other vine diseases by those understanding it. There are also very conclusive reasons for discarding the views of Prof. Cook. 1. In France, where the phylloxera has been so very destructive, the black rot has not accompanied or followed it. 2. The rot, so far as I have observed it, is no worse on the susceptible than on the more resistant varieties; while many cases might be adduced of healthy vines, and those least affected with the insect suffering most from rot. 3. On account of three successive wet summers of 1875, 1876, and 1877, in this part of the country (Missouri), the phylloxera has been less numerous and less injurious than at any time since 1871, and many vines that were suffering near to death have recuperated, yet no year since the time mentioned has black rot been worse than it was last summer."

Correspondence.

The Genesis of the Mosquito.

To the Editor of the Scientific American:

For several years past I have noticed in warm weather, that my wooden cistern, which is above ground, has been infested with peculiar looking little red worms. I have heard many others like myself complain of these worms, and I had taken it for granted that they were a species of earth worm. However, last summer I procured a glass jar and sprinkled the bottom of it with a very small quantity of sand and clay. I then half filled the jar with clear fresh water, and, after putting a dozen of these worms in the jar, I tied a piece of cloth over the mouth, and placed it in a light, airy place.

The worms were from half to three fourths of an inch in length, of a bright red color, and had rather a jointed appearance about the body. They would crawl on the bottom of the jar, swim through the water by a rapid bending of the body backward and forward, and occasionally come up to the surface of the water and float.

Within twenty-four hours after placing them in the jar, I noticed that they had all gone down to the bottom of the vessel, and had enveloped themselves separately in a kind of temporary shell made of earth and sand.

In a few days after this I saw one of these worms crawl out of his temporary house at the bottom of the jar, and swim to the surface of the water. Here, after twisting about for a few seconds, he ruptured a thin membrane that enveloped his body, and came out a full fledged mosquito ready for business. I noticed many of the other worms going through the same performance within a short while afterward. Some of the mosquitoes were much larger than others, but, as I have already stated, some of the worms were also larger than others.

F. W. COLEMAN, M.D.

Rodney, Miss., April, 1879.

Remedies for Carpet Beetles, Moths, etc.

To the Editor of the Scientific American:

At this season we are frequently besieged by inquiries in relation to the "carpet beetle," moth, etc. Many of your readers may be glad to know of the following simple remedies:

First.—Steep one quarter of a pound of Cayenne pepper in a gallon of water; add two drachms of strychnia powder. Strain and pour this tea into a shallow vessel, such as a large tinned iron milk pan. Before unrolling a new carpet, set the roll on each end alternately in this poisoned tea for ten minutes, or long enough to insure the saturation of its edges for at least an inch. After beating an old carpet, roll and treat all its seams and edges to the same bath. Let the carpet dry thoroughly before tacking it to the floor, in order to avoid the accidental poisoning of the tacker's fingers by the liquid. It is perhaps unnecessary to state that the residue of the liquid should be thrown out where it will not be drunk by any domestic animal, or if preserved for future use, carefully labeled "poison."

This preparation will not stain or disfigure carpets nor corrode metals in contact with the carpet, as will most preparations of corrosive sublimate.

Second.—One pound of quassia chips, one quarter of a pound of Cayenne pepper steeped in two gallons of water. Strain and use as above. This preparation, although irritating to the human skin, especially on cut surfaces, has the advantage of not being poisonous.

To either of these teas from one quarter to one half more boiling water may be added at the time of first using, if greater depth of the liquid in the vessel be required. When it is desirable to treat carpets that are not to be taken up, either of the above preparations may be applied by means of

any of the common atomizers to every seam and margin with good results, although a second, and even third, application may be needed.

FRANCIS GREGORY SANBORN.
Consulting Naturalist.

Andover, Mass., April 10, 1879.

The Ice Cave of Decorah, Iowa.

To the Editor of the Scientific American:

"H. M. W." is mistaken about the formation of the Upper Iowa Valley, Winneshiek county, Iowa, where the Decorah Ice Cave is situated. It is in the Trenton limestone, which is highly fossiliferous, and manufactured into monuments, table tops, paper weights, etc., presenting, when polished, a very beautiful appearance.

The Ice Cave is a fissure in the Trenton limestone cliff facing to the south, and runs nearly parallel with its face, is about 100 feet long, and varies from 2 to 6 or 8 feet in width. Height irregular, in places compelling progression on hands and knees. Says White's "Geology of Iowa," vol. 1, p. 80: "The formation of the ice is probably due to the rapid evaporation of the moisture of the earth and rocks, caused by the heat of the summer sun upon the outer wall of the fissure and the valley side. This outer wall is from 10 to 20 feet in thickness where the ice is most abundant. The water for its production seems to be supplied by slow exudation from the inner wall of the cave." It forms the most rapidly during the extreme heat of summer, and disappears in winter entirely. From several years' acquaintance with the cave, I believe the above explanation correct.

A. M. M.

Waukon, Iowa, April 2, 1879.

C. B. A. submits another explanation, namely, that the ice is due to the rapid evaporation of the moisture percolating through the soil and rocks above. To produce the ice "two conditions are necessary: first, that the supply of moisture in the cave must not be (as it was when I visited it, a hot day in June, after much rain) great enough to warm the cave and thus overcome the cooling tendency of the evaporation to form ice or to melt the ice that may have been previously formed.

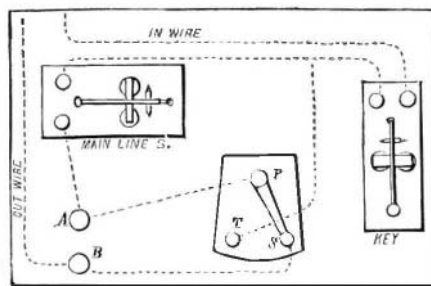
"Second, the supply of water must be sufficient to carry on the evaporation and leave a surplus for conversion into ice. This condition is met only during the summer months, when the temperature is high enough to create a current of air upward through the cave, and when supply of water is not so great as at other seasons. In the winter the ground is frozen and water prevented from soaking through, and so the ice formed in the summer evaporates. Also, the temperature outside and inside being so nearly the same, very little air passes through."

C. G. C. writes that a counterpart of the Decorah Ice Cave occurs on the south side of Black River, at Watertown, N. Y., the rock being the well known Black River limestone.

Telephones and Sounders.

To the Editor of the Scientific American:

As some of your readers appear to find difficulty in using telephones and sounders in the same circuit, I would recommend the following plan, which has been found to work well in practice upon a line where there are twenty offices, and nearly as many telephones in use:



The diagram shows the arrangement. The in wire, which comes from the zinc pole of the battery, is carried to the key and from the key to the relay or main line sounder, and thence to a binding post marked A. B is another binding post, from which the out wire goes to the line. P T S is a two point switch, one point of which, T, is joined to the wire between the key and sounder. P, the point on which the switch tongue turns, is joined by a wire to the post, A, and the point, S, to the post, B. All these connections are beneath the table, the posts, A and B, rising above, and in them the conducting cords of the telephone are inserted. When the switch tongue rests on S the sounder only is in circuit, and can be used to call. When the tongue rests on T the telephone is in circuit, and the sounder is cut out. When the telephone is not in use the switch should be kept on S, closing the circuit through the sounder and preventing waste of battery. Care should be taken that the Z pole of the telephone is attached to the post which receives the zinc wire from the battery, the post, A, in the arrangement as described. If desired, bells may be substituted for sounders.

JOHN E. NORCROSS.

Tracing the Hudson under the Sea.

The *Atlantic Coast Pilot*, published by the United States Coast Survey, explains the origin of the curious deep holes met with along the New Jersey coast, some distance out at sea. Of these "mudholes," as they are termed, nine are

known to navigators, the deepest and the furthest out being the hundred and forty-five fathom hole, 83 miles southeast of Sandy Hook light vessel. These remarkable depressions, as the *Pilot* points out, bear the appearance of having been originally a continuation seaward of the Hudson River Valley. They were in all probability scooped out by the river being forced to run through narrow gorges. Several of these gorges can still be traced running almost parallel with the New Jersey shore line. In fact, the soundings along the coast would seem to indicate that the whole coast line, ages ago, was many miles seaward of its position to-day; that then the Hudson River entered the ocean at least a hundred miles southeast of its present mouth, and that the whole continent has since subsided, the sea encroaching further and further inland, as the country gradually sank.

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.

POSITION OF PLANETS FOR MAY, 1879.

Mercury.

On May 1 Mercury rises at 4h. 20m. A.M., and sets at 5h. 6m. P.M. On May 31 Mercury rises at 3h. 40m. A.M., and sets at 5h. 38m. P.M.

Mercury will be best seen near the middle of the month, in the morning, as it is then at its greatest elongation.

Venus.

On May 1 Venus rises at 6h. 45m. A.M., and sets at 9h. 54m. P.M. On May 31 Venus rises at 7h. 21m. A.M., and sets at 10h. 29m. P.M.

The motion of Venus among the stars from night to night is very perceptible. On May 21 it will be 4° south of Pollux in declination, and will precede that star by about 2° in right ascension. Venus and the crescent moon will be nearly in conjunction May 24.

Mars.

On May 1 Mars rises at 2h. 27m. A.M., and sets at 0h. 58m. P.M. On May 31 Mars rises at 1h. 22m. A.M., and sets at 0h. 51m. P.M.

Mars is very distant, but its ruddy color and its nearness to Jupiter on the morning of the 9th will cause it to be easily found.

Jupiter.

Jupiter is coming into a better position. It rises on May 1 at 2h. 35m. A.M., nearly with Mars; and sets at 1h. 25m. P.M. On May 31 Jupiter rises at 48m. after midnight, and sets at 1h. 47m. A.M.

Although Jupiter is in south declination, it is so large a planet that it will be very conspicuous in the early morning. Jupiter will be near the waning moon on the morning of the 14th.

Saturn.

Saturn rises on May 1 at 3h. 57m. A.M., and sets at 4h. 11m. P.M. On May 31 Saturn rises at 2h. 6m. A.M., and sets at 2h. 28m. P.M.

Uranus.

On May 1 Uranus rises at 0h. 47m. P.M., and sets at 2h. 16m. A.M. of the next day. On May 31 Uranus rises at 10h. 51m. A.M., and sets at 18m. after midnight.

Uranus follows the bright star Regulus on May 1 by 2° in right ascension, and is one third of a degree below it in declination. The position changes very little during the month.

Brorsen's Comet.

This small periodical comet has passed its perihelion and is approaching the earth. It resembles a nebulous star, and moves so rapidly by one and another star that with little optical aid the observer can see the change in an hour's watch.

Its motion is from the constellation Camelopardalus to that of Ursa Major. After April 21 the comet is circumpolar and does not set in this latitude. Following the ephemeris of Schulse, the comet will be nearest the earth on May 10. Its place at that time will be among the small stars in the head of the Great Bear.

How to Prevent Diseases among Children.

A correspondent of the *New York Times* says that he has followed a recommendation from a lady to evaporize a little carbolic acid daily in the heaters as a disinfectant and a preventive against contagious diseases, and the results have been most satisfactory. "I have a large school, and out of the whole number only two pupils have been sick with scarlet fever, and even these cases were indirect ones. In my own family, which consists of fourteen children—fortunately not all my own—and five adults, not one has been afflicted with any malady, not even with a sore throat, for longer than a day or two. We certainly keep the house minutely clean, ventilate it thoroughly every day, and never heat the rooms above 66° Fah. During my thirty years' experience I have never seen the like."

We think it probable that the use of a small quantity of carbolic acid in the manner above mentioned may in some cases be beneficial. But if it were the golden rule in every family to keep the house minutely clean, ventilate it thoroughly every day, and never heat above 66° Fah., there would probably be little need of carbolic acid or any other drug.