FOR STAR GAZERS.

As the earth has now reached that part of her orbit in which the constellation Perseus appears opposite the sun, and is therefore visible in the early evening and throughout the night, we have the opportunity of observing at a convenient hour the singular variations in the light of Beta Persei, or, as it is commonly called, Algol, the Demon Star.

As is generally known to those who possess even but a slight knowledge of the appearance of the heavens, Algol varies in the amount of light it emits to the eye to such a degree that, while its normal brilliancy is that of a second magnitude star, it is often seen to be only of the fourth magnitude, presenting at such a time a very insignificant appearance. This change occurs with the greatest regularity once in every period of two days twenty hours and nearly forty-nine minutes. For two days and about twelve hours the star shines with a luster equal to a second magnitude star, the rest of the period, amounting to about nine hours, being occupied in a gradual though very perceptible decline to the appearance of a fourth magnitude star and an equally perceptible increase to its normal brilliancy.

The dates upon which the rapid changes in the light of Algol may be conveniently observed during the evenings of the ensuing fall and winter are given in the following table, which notes the moment when the light of the star is at its minimum. As the eclipse, for such it undoubtedly is, occurs at the same instant for the whole earth, the time at which it may be observed is independent of the place of the observer, and in a region so large as that covered by the circulation of the SCIENTIFIC AMERICAN, there are many eclipses visible at each extremity which cannot be observed at the other. It is, therefore, necessary to cover at least the four standard time divisions of the United States.

The table includes every eclipse visible in any of the four divisions that occurs between the hours of 5 P. M. and 1 A. M.

STANDARD TIME.

EASTERN.	CENTRAL.	MOUNTAIN.	PACIFIC.
		SEPTEMBER.	
30th, 10:58 P. M.	30th, 9:58 P. M.	28th, 0:10 A. M. 30th, 8:58 P. M.	27th, 11:10 P. M. 30th, 7:58 P. M.
		OCTOBER.	
3d, 7:47 P. M. 21st, 0:40 A. M. 23d, 9:29 P. M. 26th, 6:18 P. M.	3d, 6:47 P. M. 20th, 11:40 P. M. 23d, 8:29 P. M. 26th, 5:18 P. M.	3d, 5:47 P. M. 20th, 10:40 P. M. 23d, 7:29 P. M.	18th, 0:51 A. M. 20th, 9:40 P. M. 23d, 6:29 P. M.
		NOVEMBER.	
12th, 11:11 P. M. 15th, 8:0 P. M.	12th, 10:11 P. M. 15th, 7:0 P. M.	10th, 0:22 A. M. 12th, 9:11 P. M. 15th, 6:0 P. M.	9th, 11:22 P. M. 12th, 8:11 P. M. 15th, 5:0 P. M.
		DECEMBER.	
3d, 0:53 A. M. 5th, 9:42 P. M. 8th, 6:31 P. M. 25th, 11:24 P. M. 28th, 8:13 P. M. 31st, 5:2 P. M.	2d, 11:53 P. M. 5th, 8:42 P. M. 8th, 5:31 P. M. 25th, 10:24 P. M. 28th, 7:13 P. M.	2d, 10:53 P. M. 5th, 7:42 P. M. 23d, 0:35 A. M. 25th, 9:24 P.M. 28th, 6:13 P. M.	2d, 9:53 P. M. 5th, 6:42 P. M. 22d, 11:35 P. M. 25th, 8:24 P. M. 28th, 5:13 P. M.
		JANUARY.	
17th, 9:56 P. M. 20th, 5:44 P. M.	15th, 0:6 A. M. 17th, 8:56 P. M.	14th, 11:6 P. M. 17th, 7:56 P. M.	14th, 10:6 P. M. 17th, 6:56 P. M.
		FEBRUARY.	
6th, 11:38 P. M. 9th, 8:26 P. M. 12th, 5:14 P. M.	6th, 10:38 P. M. 9th, 7:26 P. M.	4th, 0:49 A. M. 6th, 9:38 P. M. 9th, 6:26 P. M.	3d, 11:49 P. M. 6th, 8:38 P. M. 9th, 5:26 P. M.

An extension of this table to the 24 divisions of standard time would show that every eclipse of Algol is visible from some quarter or other of the earth, though those that occur in May, June, and July would be visible from very limited regions, and under unfavorable conditions.

On the 30th of September, at New York, at the hour given for Eastern time, Algol is about four and a half hours high in the northeast. On the 12th of February, the star when eclipsed is almost in the zenith.

Those to whom this interesting subject is new, and who wish to observe this mysterious waning and waxing of the light of a star that far exceeds our own brilliant sun in dimensions, will find full directions for locating it by means of a map of the region in which it is situated, with many interesting particulars of the Demon Star, in the SCIENTIFIC AMERICAN SUPPLEMENT, No. 558, for September 11, 1886.

Aluminum Dental Plates.

The early use of aluminum was not satisfactory, as the metal was impure, owing to the presence of iron, and it soon succumbed to the fluids of the mouth. This was more generally true of cast plates, which were not only more difficult to make, but were not as good. The metal is not very easy to cast, as it does not flow freely like other metals, and the contraction is considerable, causing cracked blocks. When made from rolled plate and pure metal, aluminum for upper cases has proved very satisfactory in my hands, and not being very expensive is a recommendation, as it is a metal, and is thus better than rubber and less in cost than gold. It is very light and strong, perfectly tasteless and odorless, and as healthy to the gums as gold or platina. The teeth are best attached with rubber.—*Geo. H. Swift, West. Dent. Jour.*

The British Museum.

I made but two brief visits to the British Museum, and I can easily instruct my reader so that he will have no difficulty, if he follow my teaching, in learning how not to see it. When he has a spare hour at his disposal, let him drop in at the museum and wander among its books and its various collections. He will know as much about it as the fly that buzzes in at one window and out at another. If I were asked whether I brought away anything from my two visits, I should say, certainly I did. The fly sees some things, not very intelligently, but he cannot help seeing them. The great, round reading room, with its silent students, impressed me very much. I looked at once for the Elgin marbles, but casts and photographs and engravings had made me familiar with their chief features. I thought I knew something of the sculptures brought from Nineveh, but I was astonished, almost awe struck, at the sight of those mighty images which mingled with the visions of the Hebrew prophets. I did not marvel more at the skill and labor expended upon them by the Assyrian artists than I did at the enterprise and audacity which had brought them safely from the mounds under which they were buried to the light of day and the heart of a great modern city.

I never thought that I should live to see the Birs Nimroud laid open, and the tablets in which the history of Nebuchadnezzar was recorded spread before me. The Empire of the Spade in the world of history was founded at Nineveh by Layard, a great province added to it by Schliemann, and its boundary extended by numerous explorers, some of whom are diligently at work at the present day. I feel very grateful that many of its revelations have been made since I have been a tenant of the traveling residence which holds so many secrets in its recesses. There is one lesson to be got from a visit of an hour or two to the British Museum—namely, the fathomless abyss of our own ignorance. One is almost ashamed of his little paltry heartbeats in the presence of the rushing and roaring torrents of Niagara. So if he has published a little book or two, collected a few fossils, or coins, or vases, he is crushed by the vastness of the treasures in the library and the collections of this universe of knowledge.

I have shown how not to see the British Museum. I will tell how to see it. Take lodgings next door to it—in a garret, if you cannot afford anything better—and pass all your days at the museum during the whole period of your natural life. At threescore and ten you will have some faint conception of the contents, significance, and the value of this great British institution, which is as nearly as any one spot the *nœud vital* of human civilization, a stab at which by the dagger of anarchy would fitly begin the reign of chaos.—*Oliver Wendell Holmes, Atlantic Monthly.*

Minerals at the American Exhibition, London.

One of the most conspicuous features of the American Exhibition is the remarkable collection of minerals brought over and exhibited by Mr. A. E. Foote, of Philadelphia. Many of the specimens, which are extremely fine, have been obtained during collecting expeditions undertaken by Mr. Foote himself, and several new species and varieties have been made known to science through his indefatigable labors.

The central feature is a hexagonal pavilion covered with mica, and surmounted by a model of a snow crystal. Each side of the pavilion is devoted to a separate mineral region of the North American continent, except the first, which is filled with a collection of gems and ornamental stones. Here are rough and cut specimens of a precious ruby, topaz, opal, williamsite, with examples of malachite and azurite beautifully banded and taking a fine polish.

A lapidary who has had several years' experience in making rock sections for the British Museum is constantly employed close by.

Minerals from the region near the Pacific coast come next. Wulfenite, a rare species, some of the finest specimens ever seen, is here exhibited in large groups of orange-red crystals; also brilliantly red vanadinites and large bright crystals of chessylite or azurite associated with velvet tufts of malachite. All these are from the marvelous country that Humboldt called New Spain. The deep red garnets from Alaska in their somber settings of gray mica-schist are especially noteworthy. Among the minerals of the Rocky Mountain region are wonderful crystals of the green Amazon stone; ore from the famous Bridal Chamber at Lake Valley, New Mexico, so rich that the heat of a match will cause it to melt and fall in drops of nearly pure silver. A space the size of a moderate sized room produced about £100,000. The precious turquoise comes from Los Cerrilloz, New Mexico, where Montezuma got his chalchuhuitls that he valued above gold and silver. The Indians still make long pilgrimages for the sacred stone.

Most striking among the minerals of the Mississippi Valley and lake region are the blendes and galenas from Southwest Missouri, a district that now produces over one half of all the zinc mined in the world. It was formerly so abundant that farmers built their fences with it. Masses of the lead ore weighing ten tons were found within 12 feet of the surface. Here Indians formerly procured the lead for their bullets, placing the ore in hollow stumps and building a fire over it.

From Arkansas come fine rock crystals or hot spring diamonds, with powerful lodestones, arkansites, and hydrotitanites.

From the Lake Superior region come copper, chlorastrolites, and zonochlorite, a remarkable gem-like mineral.

In the case devoted to the North Atlantic coast region is rhodonite, so much used by the Russians in their ornamental work, in fine crystals. The mines at Franklin, N. J., produce also many minerals found nowhere else in the world, such as franklinite, named after the illustrious philosopher; anomolite, a new species recently described by Prof. G. A. Konig, of the University of Pennsylvania; troostite, jeffersonite, blood-red zincite, etc. Cacoclasite, a new species in fine crystals, associated with pink titanite, comes from the same region, as do the remarkable crystals of apatite. These are among the finest specimens ever seen, and associated with them are the brilliant twin zircons. From the apatite are manufactured hypophosphites to stimulate the appetite and superphosphates to grow wheat and corn.

The last case devoted to the South Atlantic coast region contains amethysts, sapphires, aquamarines, tantalite, gummite, and uranolite, huge sheets of mica, etc.

Next to the wall opposite is a very extensive collection, illustrating the mineralogy of Pennsylvania, which, besides the well-known coal, iron, and other ores that have made the State famous, includes very extraordinary specimens of the rare mineral brucite, from which the medicine Epsom salts may be made; diaspore in fine crystals, corundum for polishing purposes, chromite for producing brilliant yellows, etc.

Adjoining, in cases and drawers, are the college and educational collections, indispensable for the studies of mineralogy, geology, and chemistry.

The collection of American geological surveys and other scientific works is very extensive, over fifty volumes from Pennsylvania alone being shown. We have devoted so much space to the description of the extensive exhibit made by Mr. A. E. Foote, of Philadelphia, that we can only refer to the minerals shown by Kansas and other States, by the Denver and Rio Grande and C., B., and Q. railroads, and by various mining companies.—*Nature.*

How to Act at a Fire.

In a lecture before the Society of Arts, London, Mr. A. W. C. Ghean gave the following concise and simple directions how to act on the occurrence of fires. Fire requires air; therefore, on its appearance every effort should be made to exclude air—shut all doors and windows. By this means fire may be confined to a single room for a sufficient period to enable all the inmates to be aroused and escape; but if the doors and windows are thrown open, the fanning of the wind and the draught will instantly cause the flames to increase with extraordinary rapidity. It must never be forgotten that the most precious moments are at the commencement of a fire, and not a single second of time should be lost in tackling it. In a room, a table cloth can be so used as to smother a large sheet of flame, and a cushion may serve to beat it out; a coat or anything similar may be used with an equally successful result. The great point is presence of mind—calmness in danger, action guided by reason and thought. In all large houses, buckets of water should be placed on every landing, a little salt being put into the water. Always endeavor to attack the bed of a fire; if you cannot extinguish a fire, shut the window, and be sure to shut the door when making good your retreat. A wet silk handkerchief tied over the eyes and nose will make breathing possible in the midst of much smoke, and a blanket wetted and wrapped around the body will enable a person to pass through a sheet of flame in comparative safety. Should a lady's dress catch fire, let the wearer at once lie down. Rolling may extinguish the fire, but if not, anything (woolen preferred) wrapped tightly round will effect the desired purpose. A burn becomes less painful the moment air is excluded from it. For simple burns, oil or the white of egg can be used. One part of carbolic acid to six parts of olive oil is found to be invaluable in most cases, slight or severe, and the first layer of lint should not be removed till the cure is complete, but saturated by the application of fresh outer layers from time to time. Linen rag soaked in a mixture of equal parts of lime water and linseed oil also forms a good dressing. Common whiting is very good, applied wet and continually dampened with a sponge.

ENAMELED or glazed bricks, for outside or interior decoration, are made by applying to the surface a flux, which, during the burning, causes the silex to melt and form a vitreous covering. Such flux is easily colored, and thus very beautiful fancy bricks produced.