

THE ECLIPSED SUN.

OBSERVATIONS GATHERED FROM ECLIPSES OF THE SUN.

Conclusions of Eminent Astronomers Reached by Recent Photographs of the Sun's Corona as Seen During the Time That the Solar Body Was Hidden.

When eclipsed, the majestic king of day condenses into a structure of his mysterious appendages to be photographed and analyzed spectroscopically. Never in the whole history of astronomy has a finer opportunity for such work been afforded and so skillfully and completely improved by astronomers as that of the recent eclipse.

M. Flammarion, the French astronomer, after reading the Chilean cable dispatches announcing Professor Pickering's recent eclipse observations, is reported to have said: "They confirm the theory that the sun is surrounded by a luminous atmosphere to a distance equal to one-eighth of the sun's diameter."

Scarcely a quarter of a century ago many astronomers questioned whether the solar atmosphere had any marked extension, and even doubted whether the corona was a solar appendage at all.

But in the light of the late eclipse it is not astonishing that an astronomer expresses the opinion that the sun's atmosphere extends outward more than 100,000 miles.

The eruptive forces of the sun must be enormous indeed to eject the matter composing the flaming prominences not infrequently observed 40,000 miles broad, with an uprush of 225 miles a second and attaining occasionally an elevation of 400,000 miles.

All prominences, Zollner and Resplend have shown, are originally phenomena of eruption, preceded by rectilinear jets, either vertical or oblique, ascending to great heights and then seen falling back again toward the sun like the jets of our fountains.

The eruptive prominences are, as Professor Young says, "generally associated with active sun spots." Since during the late eclipse these prominences were conspicuous in connection with an unusually brilliant and extended corona and great spottedness, the before seemingly established law that the corona's size and luminosity are in direct proportion to the sun's spot producing activity is strikingly corroborated.

Professor Schaeberle cabled from Chili that his eclipse observations confirm his mechanical theory of the corona, which regards this vast appendage as composed of streams of matter ejected with initial velocities of 350 miles a second from the sun by forces which are most active near the sun spot zones.

Indications of such eruptive action have been often observed in the higher regions of the prominences. A further confirmation of this theory is that the corona in outline resembled that which Professor Schaeberle predicted

the day before. As far back as the year 1870 Mr. Brothers noted that "prominences were most numerous on the side of the sun where the corona was brightest," an evidence that the coronal matter is not less than that of the prominences ejected from the sun.

Mr. Proctor, discussing the observations of that eclipse, concluded: "I conceive we have now clear evidence of a form of action—but whether eruptive, electrical or repulsive is not yet obvious—exerted outward to enormous distances by the sun and with maximum energy over the spot zones, but local, variable and probably intermittent."

It will be seen, then, that Professor Schaeberle's theory, though by no means established, accords with old observations. No other explanation of the corona has been offered save that which attributes it to reflection from myriads of incandescent meteors or conical dust circulating around the sun.

This hypothesis has never been supported. If the corona were chiefly due to meteoric dust revolving around the sun, we should certainly expect to see it regular, and not as it generally appears, gapped, quadrilateral or four rayed, with immense wings or extensions. There seems, therefore, to be no other inference possible but that which telescopic scrutiny has long suggested—that the corona is originated and maintained by countless ejections issuing from beneath and flung through the photosphere by the sun's vertical or volcanic forces.

If the final study of the coronal photographs obtained sustain this view, science will have at least a working hypothesis for the determination of the cyclical variations of solar heat and the corresponding effects upon terrestrial temperatures and climates. The theory in question obviously opens up a new and fascinating inquiry into the anomalies of the earth's seasons which are due to variations of solar activity. We seem to be thus happily led to the very threshold of one of the grandest discoveries of modern science, which promises when developed to yield a rich harvest of practical results.

Now that most numerous and perfect photographs of all the principal appendages of the sun have been secured in Chili and Africa, astronomers should give their best energies to the study of the data. No problem they can now attack can be of greater interest or importance to science and the world.—New York Herald.

An Early Astronomical Teacher. Thales, born 640 years B. C., was the first to note the four distinct divisions due to the positions of the sun—viz, the solstices and the equinoxes. He also taught that moonlight was simply reflected sunlight, and was the man who first made a prediction of a solar eclipse.—St. Louis Republic.

A Measure of Safety. Gummy—Don't you get tired of young Higgins' nightly visits to your daughter and his staying until after midnight?

Glanders—Not at all. I regard him as a protection against burglars.—Detroit Free Press.

Family Expenses.

A few days since the wife of a wealthy man went into a grocery store where most of the provisions for the home were bought. She went in considerable haste to the proprietor and asked him to loan her a dollar. Her husband, she said, had gone down town and forgotten to leave her any change, and she must have a little immediately. She took the bill, rolled it up and put it into her glove, then in an undertone said: "Please charge that as sugar. My husband might not like it if I borrowed money."

The man said "Certainly" and the woman went out. A customer who was standing at a little distance but who was concealed from the lady by a pile of tea chests smiled to himself and then smiled at the grocer who came back to finish filling his order.

Although the grocer said nothing, it was a well understood fact to the customer, as it is to many other people in large cities, that this is not an uncommon practice. Men who are liberal with the families, as far as food and clothes go, rarely give them a cent for their own use.

They will pay any reasonable bill and many unreasonable ones, but they pay them in checks and overlook the bills themselves; then they fancy they know what becomes of the money. Such conduct is unwise.

If there is anything in the world that has a tendency to drive a woman to underhand practices it is such lack of confidence on the part of her husband or father.

A wise way is to make a regular allowance for each member of the family.—New York Ledger.

Witty Remarks of an Artist. Kenny Meadows was an artist who was always welcome at any social gathering, for he had an infinite fund of quotation and mother wit.

A certain well known studio man was his. There had been one day a long talk about fresco and the palette necessary for it, and the repeated remark that it needed a palette of earths quite tired him out.

"You talk of ochres," he said, "but the worst of all you haven't named, though it's the commonest. That's the medicore!"

"Then," said another artist, "you don't believe in the golden mean's being the best of things?"

"No," said he, "I'll divide that with you. You may take the mean, and I'll keep the gold."

According to his own telling, his standard of praise was a financial one.

"Now I dare say you think yourself a very clever fellow to paint so good a picture," he said to his friend, William Bell Scott, who had just completed his "Old English Ballad Singer." "But it's nothing to paint a picture compared with what it is to sell it. When you do that, I'll congratulate you!"

But every one knows just how much such depreciatory criticism meant. Meadows was "fond of talking."—Youth's Companion.

Works of Patience. Probably the sternest patience is displayed by the sculptor or the painter who will spend months and years in materializing a conception.

There is no doubt more of patience displayed by the Caucasians, speaking numerically, than any other race, but I maintain that it is a gift of nature and just as like to come to a dog as to a man, only the dog would not have sense enough to use it as effectively as men would.

I have seen a great deal of this quality of nature displayed by savages, such as the negroes of Africa and the Indians of America. We all admire the armor of the old English knights and the wonderfully intricate workmanship displayed upon many of them, but I have seen Indian war costumes that would make the eye of the seeker after curiosities and rarities simply blind.

The whole is intricate and interesting to look at, but closer inspection will invariably show almost endless work—labor of years to make it look beautiful. Some of the negroes of the south have fishing rods and tackle that are marvels of delicate hand workmanship, so much so that there is nothing like them to be had in the market for money. All this, however, is only accomplished by almost supreme patience.—St. Louis Globe-Democrat.

Facts About Foreign Population. There are more than 1,000,000 Germans in the chief cities of the United States. They are most numerous in New York and Brooklyn and in the cities of the west. They are least numerous in Boston and Washington.

In these two cities and in Philadelphia and San Francisco the Irish outnumber the Germans. In New York, Chicago, Brooklyn, St. Louis, Baltimore, Cincinnati, Cleveland, Buffalo, New Orleans, Pittsburg, Detroit and Milwaukee the Germans outnumber the Irish. There are 3,500 natives of Ireland to 55,000 Germans in Milwaukee. In Boston there are 10,000 Germans to 71,000 Irish.—New York Sun.

Suggestions For Mary Anderson. Mrs. Mary Anderson-Navarro, sometimes known as "Our Mary," is writing a book of reminiscences. If she goes back far enough and sticks to facts, they will be highly interesting.

She should tell how Dr. Hamilton Griffin went on "change in St. Louis and scattered tickets broadcast that the house might be filled. And she should publish the first opinions of the New York critics. Such things do not in the least reflect on her ultimate triumph, but merely show her early pluck and confidence in her own ability. Let us have the reminiscences from the beginning.—New York World.

At a Lawyers' Banquet. At the banquet of the Virginia Bar association, the wine being slow in materializing, a certain judge obtained a bottle with great difficulty. Proud of his success he exclaimed: "Gentlemen, my strong right arm secured this champagne. I acquired it by feudal tenure."

"Well," remarked a brother lawyer as he poured out a copious draft, "we will soon hold it in free and common sokeage (sogage)."—Green Bag.

A RECONCILIATION.

I do not know If I was wrong or you Reproves me so For think I gave you pain That I my gift sent you And take it back again.

I do not know If you or I were right, For years have caused me woe, And if you weep again I shall grow more contrite And cover all your pain.

I do not know Now care which one was right, For when your dear eyes flow I cannot speak for pain, And tear mist blind my sight Until you smile again.

Be let it go— We may have both been wrong, Or partly so, But she is purged by pain, And royal seals are strong To wound and heal again. —Ella Dicks Clymer in Harper's Bazar.

The Custom of Collecting "Peter Pence." The custom of collecting "Peter Pence," or "Rome coin," as it is sometimes called, is of ancient origin.

If the custom is fairly understood by the outside world, it consists of setting aside one day out of each year for taking up a collection of money (not necessarily pennies) to be sent to the pope at Rome, who is supposed to use it in defraying the expense of the holy see.

Chambers' "Book of Days" and Brand's "Popular Antiquities" neither mention the custom, but I have succeeded in tracing it back to the twelfth century for a certainty. One authority even goes so far as to ascribe its origin to Ina, king of the west Saxons, who went to Rome in the year 721 and founded a hospital for English pilgrims to the sacred city, the expenses to be defrayed by "each mayle adult" giving one "small copper coyne each year."

This mighty collection of pennies was forwarded direct to the pope. Others claim that the honor of originating the Peter pence scheme is due to Ethelwulf.

At a very early date (the most laborious research fails to locate these things as far as the year, month and day are concerned) the copper penny clause was changed until the tribute was understood to consist of a "silver penny" to be contributed by every family who possessed land or cattle of a yearly value of 30 pence. This probably means upon which a yearly tax of 30 pence was levied.—St. Louis Republic.

How Squire Bond Was Fooled. Squire Bond, whose descendants are foremost in Springfield affairs, kept a general store in the early part of the century out on the borders of Worcester county, and like all storekeepers of the period he sold rum.

One old tippler whose credit was very weak got badly in arrears, and Mr. Bond got wary about trusting him. The tippler came in one day with his jug half full and wanted it filled clear up, as he was going away. The liquor was poured in until it came up to the cork, but when the squire asked for the money it was not forthcoming.

No plea could induce him to trust any longer, so he poured out as much as he had put in and the tippler went away. The liquid which had half filled the jug beforehand was not rum, but water.—Springfield Homestead.

Phillips Brooks as a Schoolteacher. It is related that the first attempt of Phillips Brooks to begin a career was a discouraging failure. After he left college he became a tutor in the Boston Latin school, but the principal was so little impressed with his capacity that he asked for his resignation.

When young Brooks then decided to enter the ministry, the pedagogue predicted his failure on the ground that he had never known any one to succeed in anything else who had failed in schoolteaching.—Chicago Herald.

Consoling the Widow. Parson Whangdoodle Baxter—Sistah Snowflake, yer shouldn't go on dat way about de doff ob yore late husband. Remember how much better off he is now he is dead.

"Dat's meant as a disreproach for me. Is dat de way you console de widders and orphans? Git out, niggah, fere I scalds you!" retorted the dusky widow.—Texas Siftings.

A Puzzled Youngster. Harry is the youngest of the family, the only boy among several girls, and sometimes the superior advantages of girls seem to weigh heavily on his youthful mind.

The other day we heard him say thoughtfully to himself: "Women always first. I wonder why God didn't make 'em first, but he didn't. He made Adam first."—New York Tribune.

The Woman to Be Pitted. The woman who must earn money and at the same time keep house, nurse babies, sew up seams, manage servants and attend to the complex affairs of an establishment is to be pitted. She has far too much for one pair of hands to do.—Harper's Bazar.

England contends with smallpox at a disadvantage. Many persons of influence do not believe in vaccination, write against it and oppose it in every way they can. The opposition has grown greatly during the long absence of the epidemic.

"It will cost you 15 cents just the same," are the reported words of a New York druggist when he was told that the use of his telephone was desired in a case of life or death. Of course the 15 cents were paid.

In the Yosemite valley there is a fallen tree 800 feet long and several centuries old, that, it is said, has been hollowed out so that for a distance of 80 yards a person can walk upright inside it.

Senator Mills says that for 10 years the railroads of Texas have been operated at an actual loss of \$1,000,000 a year to the railroads themselves.

The earliest library was that of Nebuchadnezzar. Every book was a brick, engraved with cuneiform characters.

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