[Correspondence of the Scientific American.]

American Association for the Advancement of Science.

ALBANY, N. Y., Aug. 27, 1851.

CLOTH FOUND IN THE OLD MOUNDS.—Dr. J. W. Foster, U. S. Geologist, read a paper on several specimens of cotton cloth found in one of the ancient mounds, in Charlestown, Jackson Co., Ohio, by a Mr. John Woods. The manufacture of the cloth was attributed to another race—a previous one—to that of the present Indians. It was presumed they were the same as the old Peruvians who were acquainted with making cloth while our Indians were not.

RATTLESNAKES.—Dr. H. Salisbury, chemist of the State Agricultural Society, read a paper on the "influence of the poison of the rattlesnake on plants." The experiments instituted gave curious and interesting results regarding the poisonous effect of the venom on the structure of plants, but after all, as remarked by Prof. Agassiz, it was a very inconclusive paper.

OBSERVATIONS TWICE IN ONE NIGHT.—Prof. Mitchell said that it had been doubted whether the repetition on the same night, of the observation of a star was of any value. In order to give the opinion of an impartial astronomer, he read an extract from a letter from Professor Challis, of the observatory at Cambrige, England, dated November 21, 1849, who writes that in his opinion a repetition on the same night of the observation is very essential.

Prof. M. now began minutely to explain his instruments, and observed in the first place that he had not, as yet, brought them to completion; but, like others, he was highly gratified at the success already obtained. His greatest difficulty had been in devising means to get rid of slight variations observed; and the task was more difficult as the differences were more minute. Up to the present time; he had not obtained observations of declinations directly, but differences of declination. He gave an account of his observations made upon the diameter of the sun since the New Haven meeting, and showed by their accuracy the capabilities of his instrument. He then showed its power of measuring stars far apart, and that the work of different nights could be recorded in the most perfect manner on the same plate. The observations of one night were recorded on five of ten wires viz. first, third, etc., and on the succeeding night, observations were recorded on the alternate wires; the second, fourth, etc., and with the most beautiful exactness.

RELATION OF THE CHEMICAL CONSTITUTION OF BODIES TO SIGHT.—Prof. Horsford read a long paper on this subject, in reference to metals and colors.

He called the attention, first, to the well known facts that the color of the hair on animals varied, and was more intense on certain portions of the body. The metals also had colors which were affected by the composition. The change of color in summer and winter was also a well known fact. He enumerated many metals which changed their color by the simple process of heating. These were phenomena which ought to be investigated by means of chemistry. The change of tint is without change in chemical composition. The law appears to be that metals pass from a lighter to a darker tint. In charring wood we have a change from a lighter to a darker tint.

He illustrated how the compounds of the several metals as they became more divided in their molecular structure varied. He exemplified them by the series of compounds of lead with oxygen, which as the oxygen prevailed, the colors became lighter. This was in keeping with discoveries made by Liebig and other eminent chemists whom he named.

The conclusions of Prof. Horsford were: The color of bodies depends upon the extent of the surface of their smaller particles or groups of atoms.

Transparency depends upon the arrangement of lesser atoms in certain order, constituting large groups.

Whiteness depends upon such extent of surface of the groups of atoms as shall reflect all light, or upon such number of these plates produced by pulverizing transparent bodies as will reflect all the light.

Blackness depends upon the subdivision of groups to such minuteness that they no longer reflect light, or by producing interference destroy it.

Heat by subdivision causes darker shades He also observes in a note that there seem to be successive scales of colors produced by heat.

Prof. Hare stated that he had made many experiments with calcium. He complained, that he had made certain discoveries of calcium, which had never been noticed, while fame attributed the discovery of calcium to Sir Humphrey Davy.

Prof. Smith, of Louisiana, did not agree with Prof. Horsford, in some of his conclusions, showing that there were numerous exceptions in the mineral kingdom. There has recently been discovered the Amorphous or Black Diamond. The diamond is generally supposed to be a clear transparent substance; yet here was a specimen of a black variety, which was proved, by the investigations of Dufresnoy, to contain 98 per cent. of carbon. The color of this variety of diamond proceeded entirely from molecular structure.

METEROLOGICAL OBSERVATIONS.—Prof Guyot, of Cambridge, read a paper on this subject. He showed the importance of these observations to the thorough knowledge of meterology, and circulated plates an sheets prepared to direct observers as to the classification of the clouds, and giving the form in which the observations, and indicating the time and manner in which the notations ought to be made He exhibited, also, the instruments provided by the Association, such as psychrometers, thermometers, &c. Printed tables were also exhibited, which exemplified how the association had published the various mean results which had been obtained in one place. For instance, the table exhibited at North Salem, in Westchester county. In the month of June, each day there was taken three times, at the hours of 6 A. M., 2 P. M., and 10 P. M., observations of the meterologic state of the atmosphere, as follows:—

The phase of the moon, the barometrical indication, the heighth of the thormometer, direction and force of the wind, the plants in flower, the migratory birds first seen, the state of the psychrometer, the force of vapor, humidity, the state of the rain gauge, the state of cloudiness, with notes of the various kinds of clouds visible.

Prof. Guyot stated that there were but fifty places of observations as yet established, and he exhibited how very small a portion of this continent had as yet been covered by those fifty stations. He pointed out the vast table land which reached from the Mississippi to the Rocky Mountains. This vast table land, he believed, exerted more influence on the meteorology of the continent than even the Rocky Mountains.

ZODIACAL LIGHT.—Prof. Olmstead read a paper on this subject, and the results of a series of observations on the Zodiacal Light, made at Yale College during six years, from 1833 to 1839. He adverted to the general ignorance prevalent respecting this body, and enumerated several causes which render continual observations difficult, such as the presence of clouds, of the Moon, of Venus, and of Jupiter, as also the low angle which the direction of the Zodiacal Light makes with the horizon at certain seasons of the year. He next offered an accurate description of that body, and a drawing exhibiting the phenomenon as it appears at the time of the vernal equinox.

The professor next proceeded to inquire into the nature and constitution of the Zodiacal Light, as its length, its duration, its motions, and the material of which it is constituted. It appears that the length or elongation from the Sun varies much at different seasons of the year, and not only apparently, but really, being sometimes below 60 degrees atone time, and again reaching in a few and rare instances, to 120 degrees. An elongation of 90 degrees from the Sun, implies that it reaches to the Earth's orbit, and it must of course sometimes reach far beyond it.

The motions of zodiacal light are such as to indicate the revolution round the sun, and this fact was shown to be accordant with the views of La Place. The material of which this body is constituted appears to have great analogies to that which forms the tails of comets included under the general appellation of nebulous matter, being like that in its tenuity, transparency, shape, and even shade of color.

Finally, Prof. O. proceeded to the question "whether or not the zodiacal light is the origin of the Periodical Meteors of November and August, particularly those of November." He said that he does not assert positively that this is the body which affords meteoric showers.

This subject is still a mystery to Astronomers.

SEEING THE BLOODVESSELS OF THE EYE.—Edward Hitchcock, Jr., stated his "observations on the experiment by which some persons may see the arteries of their own eyes." He showed how some persons had a faculty of seeing the blood vessels of their own eyes Sir David Brewster had made the same remark A certain professor stated that only persons who had large pupils can see their own eye. But his experience led him to believe that it was not confined to persons with large pupils. We had thought that every person had this faculty; we can see, by a simple experiment, all the blood vessels of the eye. It is thus performed:

Let a lamp be held in one hand, and keeping the eye steadily directed forward, move the light up and down on one side of the line of vision, when an image of the blood vessels of the eye will be observed like the picture of a plant.

AIR FOR CONVEYING MECHANICAL POWER.—Lieut. Hunt, of the U. S. Engineers, read a paper on this subject. He said:—Mechanical power is among the chief elements of wealth, and is of great value in the political economy of a State. He was about to bring forward a new system of economy in the use of a mechanical power which was now entirely lost. He exemplified his meaning by citing the immense power which was lost at Rochester, by the formation of the ground over which the Genesee River flowed, and which by his project might be economically applied to tubes to condense air which might then be made to supersede steam, as it would do away with the the use of fuel to keep up the power which was chiefly used in manufacturing. He stated that Pepin had proposed the same project, thongh not so fully or on as large a scale as he thought it might be applied. For all stationary power, this was invaluable, especially to localities where it was deemed advisable to establish manufactures. This principle was illustrated by the experiments made by the atmospheric railways, in which it was shown that atmospheric pressure might be applied for great distances. The principle was established, as far as the railways were concerned, though it was true the stockholders had to suffer some. It would also enable large central establishments to be formed, which by means of exhaustion or compression pipes, the power necessary for manufactures and machinery might be conveyed in the same manner as gas or water itself. Thus the space, attendance, risk and disagreeableness of steam generating will be saved, while all required power would be purchased from the power manufacturers, and distributed through air wains, just as in gas or water distribution.

By consulting the Scientific American he will find this subject elucidated.

MEERSCHAUM OF ASIA MINOR.—Prof. Smith late from Asia Minor, read an interesting paper about this substance found on the plains of Eski Sher.

It is found at various depths, in a species of calcareous breccia, containing masses of the rocks of the surrounding mountains, where may be found all that is found in the plain except the Meerschaum, the origin of which he was inclined to attribute to the change produced upon carbonate of magnesia by waters containing silex. It was doubtless explored at this very place by the ancient Greeks; the use, however that, they made of it is unknown to us. The companies who now explore are Turks, and those who labor are paid proportionally to what is extracted; and as the value of this substance increases greatly in proportion to the size of the mass, the business is of a precarious nature, and in many instances is a cause of great loss to the miners, while at other times they procure pieces affording large marketable specimens, and their profits then are proportionally good.

The mining for this substance is carried on with the same eargerness, and its yield is as precarious as that of gold. Specimens were exhibited showing both its mineralogical and geological character.

DOCTRINE OF CHANCES.—Prof. Pierce preented this subject thus:

If a person were to throw a thousand marbles on the floor, what probability is there that, when they ceased rolling, one hundred of them should be found close together, so that they might be covered by a hat? This problem, or rather the principle involved, had been discussed by Prof. Mitchell, of England, in the Philosophical Transactions for 1776, wherein he considers the distribution of the stars in the heavens, and attempted to show the probability that there existed a physical connection between some stars, from the fact that they were close together and supposed he had given the true solution. He had not by any means. Prof P. now used some algebraic formulæ to show his own theory, and spoke at length on the subject,—but still nothing was made out of it.

INDIANS OF CALIFORNIA.—Dr. J. L. Leconte read a very interesting paper on the characteristics of these Indians. He stated that the Oregon Indians did not differ from those of California.

The special difference between them and the eastern Indians, consists in the greater extent of face, with smaller and narrower cranium, a less decided obliquity of eye, a greater flatness of nose, dependent on a greater breadth of the alœ, and a less firm cartilage; greater protusion of lips, and a more pointed chin. The last is a deceptive character, and may be produced simply by a greater expansion of the face below the eyes. The color varies, being much darker in some tribes than the others, and is usually much enhanced by their dirty habits as they never wash any portion of their bodies, except in summer, as relief from the excessive heat.

The other characters more clearly separating this from allied races, are the greater abundance of hair on the body—many of the males having quite as much hair on their legs as is common in our own race. They have likewise much more hair on their faces than other Indians; always have hair on the axilla. This character is wanting in the females. The differences in form between the sexes are more apparent than in any other race. The males are almost always slender and well proportioned, while the females are short, broad, and entirely destitute of all symmetry.

In psychical character these nations show still stronger differences from the eastern tribes. Quiet and submissive, the natives living with the whites have assumed a servile condition which under no circumstances could have been impressed on the eastern Indian.

[Remainder next week.]

To Prevent Horses Being Teased by Flies.

Take two or three small handsful of walnut leaves, upon which pour two or three quarts of cold water; let it infuse one night and pour the whole next morning into a tea-kettle and let it boil a quarter of an hour; when cold it will be fit for use. No more is required than to moisten a sponge, and before the horse goes out of the stable, let those parts which are most irritable be smeared over with the liquor, namely, between and upon the ears, the neck, the flanks, &c.

[The above we do not give on our own authority, but on another's; as it can be tried without any expense and but little trouble. If good, it should be universally known, and there is no other way to test its value but by experiment.