

of acid and one of alcohol. Given internally, or applied to the wound at a late period, it produces no effect. It is believed to act, not by neutralising the poison, but by causing contraction of the small vessels, and thus preventing its absorption.

THE following interesting account was published in *Notes and Queries* of August last year without eliciting any reply. Mr. Alexander Williams writes:—"As the Commissioner for Western Australia of the International Exhibition of 1862, I received from the Colonial Committee at Perth several specimens of native shields. The long narrow form of these implements of defence is common to all the Australian colonies I believe, but I cannot say whether the ornamentation is uniformly the same. But among the Swan River nation it consists of an oblong pattern (following the shape of the shield) composed of border within border, traced in different coloured paint. The late Mr. Christy called my attention to the exact similarity of these shields to those used by the natives of Central Africa—a similarity not only in shape and pattern but actually in the succession of colours in the pattern. How is this to be accounted for? It is possible (and no other theory seems admissible) that it is purely an accidental coincidence. It is perhaps not difficult of belief that the native mind in two races in all respects so utterly distinct should have hit upon the same shape and form of weapon to meet and throw off the common spear. It is even not very surprising that savages unacquainted with 'lines of beauty' should adopt the same crude form of ornamentation, but it is somewhat startling I think that they should have used apparently the same pigments, and very extraordinary as it appears to me that they should have adopted precisely the same succession of colours."

WHILST we have been literally overwhelmed with rain in this country for the last three months, it is interesting to hear that in Tientsin in China there was so little snow in the winter, and hardly any rain has fallen since, that the peasantry are complaining of the want of water, and consequent injury to the crops.

A SEVERE earthquake shock is reported from Brooklyn and Staten Island, New York, on the 19th of last month at about 10 P.M. No great amount of damage was done, and the motion appears vertical rather than horizontal in character.

THE *American Journal of Science* gives a long report of the severe earthquake at Oaha, Hawaiian Islands, on February 18 of this year. It commenced at about 11 minutes past 10 P.M., and lasted about a minute. The direction of motion was vertical, with a rocking movement N.E. and S.W. The usual roaring sound preceded the earthquake and was heard far out at sea. No earthquake wave is reported from any quarter, although the earthquake itself seems to have been felt on all the islands more or less severely. No unusual volcanic action is reported. Slight shocks were also felt on the 22nd and 24th of the same month. It should be noticed that a severe earthquake is reported from Chile on the 25th, and shocks were noticed in Peru on the 22nd and 23rd of February.

THE existence of certain plants only in limited districts is one of the most remarkable points of interest in connection with the problem of the distribution of species. Mr. Moggridge, in his valuable "Contributions to the Flora of Mentone," figures a very elegant species of *Leucosium*, of which no drawing had hitherto been published. "It is believed to have but one habitat on the face of the earth, claiming only a small strip of rocky shore reaching from Nice to about two miles east of Mentone. *Leucosium hyemale* grows in a stony soil, and out of the cracks of the hardest limestone rocks at Port St. Louis, Cape Veglio, on the way to Monaco, and at some height on the Aggel mountain, besides other less abundant localities." We are not

aware whether this species has been introduced to English gardens, but it would be a very desirable acquisition. At Mentone it flowers in April.

The Ant-eating Woodpecker (*Melanerpes formicivorus*) a common Californian species, has a curious and peculiar method of laying up provision against the inclement season. Small round holes are dug in the bark of the pine and oak, into each one of which is inserted an acorn, and so tightly is it fitted or driven in, that it is with difficulty extracted. The bark of the pine trees, when thus filled, presents at a short distance the appearance of being studded with brass-headed nails. Stowed away in large quantities in this manner, the acorns not only supply the wants of the woodpecker, but the squirrels, mice, and jays avail themselves likewise of the fruits of its provident labour.

DR. GEORGE STUCKLEY gives an interesting account of the Western Mole (*Scalops Townsendii*), which occurs in the Oregon and Washington Territories. He kept a specimen for some time in a box, at the bottom of which was a quantity of rich black loam. When disturbed it instinctively endeavoured to escape by burrowing in the earth of the box, using its long-pointed nose as a wedge to pioneer the way. The excavation was performed by its broad stout hands, which, surmounted with their long sharp claws, seemed admirably adapted for the purpose. The fore paws were worked alternately as in swimming, the hind feet acting as propellers. Although the earth in the box was soft and friable, it was nevertheless a matter of astonishment to see how rapidly the little creature could travel through it. When he slept it was in a sitting posture, with the body curled forward and the neck strongly bent, so that the nose rested between the hind legs. He thus assumed the shape of a ball, evidently his ordinary position when asleep.

THE cultivation of the poppy in China, which has been more than once prohibited by Imperial edicts, appears to be increasing everywhere, and becoming a profitable trade. In Szechuen, where the climate is warm and the season early, two crops at least are produced on the same ground annually. The seed of the poppy is sown in February, the plants flower in April, and the fruits are so far matured by the middle of May, that the juice is collected, and the stalks removed and burnt directly after, but previous to this the second crop, which may be either Indian corn, cotton, or tobacco, is sown, so that almost by the time the poppy is cleared from the field the new crop makes its appearance. The profit derived from the cultivation of the poppy is not only the result of a fair market value and a ready sale, but also from the fact that much of the work in the plantation, especially the gathering of the juice, can be done by the children of the family. The scratchings or incisions being made in the capsules in the morning, the juice which has oozed out in the course of the day is collected in the evening, and after simply exposing it to the sun for a few days it is ready for packing. The seed not required for sowing is used for food.

ON THE RECENT SOLAR ECLIPSE*

I.

MY duty to-night, a pleasant one, although it is tinged with a certain sense of disappointment, is to bring before you the observations which were made of the recent eclipse in Spain and Sicily, to connect them with our former knowledge, and to show in what points our knowledge has been extended. In these observations, as you know, we had nothing to do with the sun as ordinarily visible, but with the most delicate phenomenon which becomes visible to us during eclipses. I refer to the Corona.

General Notions of the Corona

Let me, in the first place, show you what is meant by this

* A Lecture delivered at the Royal Institution, Friday, March 17, 1871.

term, and state the nature of the problems we had before us. I have here some admirable drawings, which I will show by means of the lamp, of the eclipse that was observed in 1851 by several astronomers who left England in that year to make observations in Sweden, where the eclipse was visible. You must bear in mind that the drawings I shall bring to your notice were made in the same region, at places not more than a few miles apart.* The first drawing was made by an observer whose name is a sufficient guarantee for its accuracy—I refer to Mr. Carrington—and when the sky was absolutely free from clouds. In the next diagram you will see the corona is changed. The bright region round the sun is no longer limited to the narrow border of light round the dark moon, as seen by Mr. Carrington, but it is considerably expanded. The third gives still a greater extension, although that picture was drawn within a quarter of a mile of the place where Mr. Carrington's was taken. And lastly, we have a drawing made by the present Astronomer Royal, of that same eclipse, through a cirrostratus cloud, as unlike Mr. Carrington's as anything can possibly be. So that you see we began with a thin band of light about the moon, which would make the corona a few thousand miles high, and we end with a figure which Mr. Airy graphically likens to the ornament round a compass-card, and which gives the corona a height equal to about once and a half the sun's diameter.

I will next bring before you some drawings made during the eclipse of 1858, which was not observed in European regions, but in South America by two first-rate observers—one, M. Liais, a French astronomer, who was stationed at Olmos, in Brazil; the other, Lieutenant Gilliss, who was also there as a representative of the American Government, and observed some thousand miles away in Peru.

I will throw on the screen the appearances observed by these gentlemen, and I think you will acknowledge the same variations between their results, as to degree, while in one case we get a perfectly new idea of the phenomena—a difference in kind. I would especially call attention in the Olmos drawing to those extraordinary bundles of rays of wonderful shapes, which you see are so much brighter than the other portions of the corona. Such forms have been seen in other eclipses, but they are somewhat rare. The drawing made by Lieutenant Gilliss bears the same relation to that made by M. Liais as Mr. Carrington's did to the Astronomer Royal's; so that we may say that we not only get variations in the dimensions of the corona as seen at different stations, but that we furthermore get a strange structure introduced now and then in our drawing in regions where absolutely no corona at all exists in the other.

So much by way of defining the phenomena and giving an idea of the eye observations generally.

Let me now attempt to show you how the phenomena observed in the last eclipse bear upon the results which had been previously accumulated by means of telescopic and naked-eye observations, and by means of the polariscope and spectroscope.

I.—TELESCOPIC AND NAKED-EYE OBSERVATIONS

a.—A Part of the Corona is undoubtedly Solar

The first use I propose to make of the telescopic and naked-eye observations of last year is to show you a photographic copy of an admirable drawing made by Mr. Brett, who, though unfortunate enough to see the sun only for a very short time, was yet sufficiently skilled to make good use of that brief period. This drawing will bring before you the fact that even when a large portion of the sun remained unobscured by the moon, Mr. Brett was enabled to see a dim ring of light round the unobscured portion, which since the year 1722 has been acknowledged, beyond all question, I think I may say, to represent something at the sun. It was observed in 1722 round the unobscured sun, and in more recent times by Mrs. Airy in 1842, and by Rumker $1\frac{1}{2}$ minute before totality in 1860, not to mention other instances. Therefore we have one observation made during this eclipse, confirming the old one, that in the corona there is a region of some small breadth at all events which is absolutely solar, and which it only requires a diminution of the solar light to enable us to

see. This, then, we may look upon as the known; now let us feel our way gradually outwards.

b.—Rays, or Streamers, are added at Totality

The drawings made in all the eclipses which have been carefully recorded bring before us quite outside this narrow, undoubtedly solar region, observed before totality, as I have shown, and also by Mr. Carrington, and by Lieutenant Gilliss during totality in 1851 and 1858, extraordinary appearances of a different order. While in fact we have a solar ring from 2' to 6' high, we have rays of all shapes and sizes visible outside, in some cases extending as far as 4°, and in all cases brighter than the outer corona on which they are seen, the rays being different in different eclipses, and appearing differently to different observers of the same eclipse, and even at the same station. Here is a copy of a drawing made by M. Rumker of the eclipse of 1860, and I show it for the purpose of calling your attention to the fact that the two curious rays represented in it belong to a different order of things from those which we see in the rest of the corona. From the beginning to the middle of the eclipse the east rays were the most intense. In the next drawing, which was made by the same observer, you see something absolutely new; and now the western side of the corona is the most developed; we have a new series of bright rays, and altogether it is difficult to believe that it is a drawing made by the same observer of the same eclipse.

The third drawing is a representation of the same eclipse by M. Marquez, who observed with a perfection of minute care which has scarcely ever been equalled: I bring it before you to show that the rays he saw were altogether differently situated. We may conclude then that the rays, a though extremely definite and bright—as bright or brighter than the other portions of the corona which are visible before totality, they being invisible before totality—appear different to different observers of the same eclipse, and to the same observer during different phases.

c.—They Change from Side to Side

I have already said that M. Rumker observed that from the beginning to the middle of totality the rays on the east side of the sun were longest and brightest, and that from the middle to the end of totality the rays on that side of the sun where the totality ended were longest and brightest.

We will now carry this observation a step further, by referring to three drawings made by M. Plantamour in the same eclipse, that of 1860. In the first drawing we have the beginning of the total eclipse as seen in the telescope; with the naked eye naturally we should get the sun disappearing at the east or left-hand side, the moon moving from west to east; in the telescope things are reversed, and we have it right instead of left: and here we have the same thing that M. Rumker observed, namely, that when the eastern limbs were in contact, bright rays (M. Plantamour saw three) were visible on the side at which the contact took place. When the moon was half way over the sun, two rays of reduced brilliancy were observed on that side, not necessarily in the same position as those first observed, but one of these has been abolished altogether; and on the other side of the sun, where totality was about to end, we have three rays gradually suggesting themselves: at the end of totality the rays visible at the commencement are abolished, and now instead of them and of those seen at the middle of the eclipse, we have a brand new set of rays on the side of the moon from whence the sun is about to emerge.

This observation I need hardly say is of considerable importance in connection with the fact that from the year 1722 almost every observer of a total eclipse has stated that there is a large increase of brilliancy, and an increase of the size of the corona on the side where the sun has just been covered, or is just about to emerge.

Now, what was there bearing on this point in the recent observations? I have here three drawings, which, though roughly done, you will see are of great importance side by side with those of M. Plantamour. These are drawings which have been sent in to the Organising Committee by Mr. Gilman, who lives in Spain, and who took considerable interest in the eclipse, and sent the results of his observations to England with the eclipse party when they came home; and it is of importance that you should see everything that Mr. Gilman has done. If you agree with this explanation of the square form of the corona, which was observed in Spain this year, it will explain the quadrangular form observed in the corona in a good

* Mr. Carrington observed at Lilla Edet, on the Grota River. The Astronomer Royal observed at Göttenburg. The second drawing referred to was made by Petersen, at Göttenburg; the third by a friend of the Rev. T. Chevallier, at the same place, and I might have added another by Fearney, taken at Rixhöft, in which the corona is larger than in any of the others. The series is most instructive. See Mem. R. A. S. vol. xxi.

many previous eclipses. Mr. Gilman says that at the commencement of totality—let me remind you, the commencement was determined by the disappearance of the sun at the east limb of the moon, which is east in Mr. Gilman's drawing, as he was observing with the naked eye—the commencement, he says, was determined by the corona flashing out very much like a capital D. You see on the black board exactly the outline, and you will at once mentally associate one half of the diagram with the rays observed by M. Plantamour, and the other half, in which there is a nearly perfect ring of light round the moon, with the corona observed by Mr. Carrington all round it in a cloudless sky. At mid-eclipse Mr. Gilman also observed the corona, sketched out its outline carefully, and found rays coming out on the opposite side, adding themselves on to the perfect ring first seen there. Opposite the two salient angles he observed at the commencement of totality—represented by the top and bottom of the upright stroke of the capital D—there were two others; *the corona now appeared square*, and then, just before the end of totality came on, the two corners first seen were observed to disappear altogether, leaving nothing but a perfect ring, and where, at the beginning of the eclipse, nothing was seen but a perfectly round ring, the two exactly similar forms on the opposite side shot forth, and you got a D reversed (∩). Mr. Warrington Smyth, who drew a square corona, saw the light flash out into the corona before the end of totality, and believes that all the angles of the square were not visible at one and the same time.

Here, then, you have observations of exactly the same character as those of M. Plantamour, to which I have referred. In the drawings of both are shown the inner part of the corona, which you saw growing in the observations of 1851, to which were added the strange forms observed in 1858. You have these strange variations positively growing at the same place and the same time, in the same and in different eyes. Obviously there must be very much that is non-solar, call it personality, atmospheric effect, or what you will, connected with it. We have added to the stable the unstable. The question is, to what is this unstable portion due?

d.—They are very variously represented

I will now refer to other drawings of the late eclipse, which were made in Sicily. For some reason or other, which I do not profess to understand, the corona, which appeared in Spain to be square, and to Mr. Gilman like a D at the beginning, and like a D reversed (∩) at the end,—to all those with whom I have conversed who saw it in Sicily, it appeared as round as you see it here, in this drawing made by Mr. Griffiths; and, instead of being square, we had sent to us all sorts of pictures, a large number of them representing a stellate figure. Here is a drawing made by a Fellow of the Royal Society, on board one of Her Majesty's ships (the *Lord Warden*) which were trying to save the poor *Psyche* at Catania. In this we have perfectly regular rays drawn from every region of the sun, some long, some short, but similar rays are almost invariably opposite each other; but in the interior, inside these rays, the corona is just as it was observed by Mr. Griffiths at Syracuse. I now show you a drawing made by an American gentleman at sea, between Catania and Syracuse, with one ridiculously long ray, a ray as long as was seen by Otto Struve in 1860. Other drawings were made, even on board the same ship, so unlike each other, and so bizarre, that I need only refer to them as showing that there at all events must be some personality. We have then to account for the variations between the observations made in Spain and those made in Sicily. I regret that we have not a third order of difficulties to contend with, as doubtless we should have had if observations had been made by Mr. Huggins' party in North Africa.

e.—The Rays are accompanied by a Mass of Light.

These changes of the rays from side to side are accompanied by, and are perhaps to a certain extent due to, the bursting forth of brilliant light in their neighbourhood, where the limbs are nearest in contact. This was first observed by Miraldi in the eclipse of 1724, and has frequently been recorded since. Mr. Warrington Smyth, to whom I have before alluded, states that he noticed this in the last eclipse, and the photographs, I think, have recorded it; but as there is some uncertainty on this point, I need only suggest it.

f.—Long Rays are seen extending from the Cusps before and after Totality

So far I have referred only to the rays visible during totality, but long rays were seen when a crescent of the sun was visible

in 1860 and 1868 by Mr. Galton and Mr. Hennessy. Mr. Brett caught the same phenomenon last year; but as the sky was cloudy the commencements of the rays only were seen, appearing like delicate brushes in prolongation of the cusps. These observations are of great value, as *no one for one moment imagines that these rays are solar*, and yet they are very like those seen during totality.

g.—Sometimes Dark Rays, called Rifts, are seen instead of Bright ones

Those rays to which I have referred are, however, not the only kind of rays that are observed. At times are seen, as it were, openings in the corona; the openings being of the same shape as the rays, that is, expanding as they leave the dark moon, and opening more or less exactly as the rays do. Like the rays also they are sometimes very numerous; in other eclipses they are few in number. Let us take the eclipse observed in India in 1868. Several drawings made there showed the corona as square as it was drawn in Spain last year; others as round as it was seen in Sicily; but the eclipse was not observed only in India, it was observed at Mantawalok-Kelee by Captain Bullock, and at Whae-Whan, on the east coast of the Malayan Peninsula, by Sir Harry St. George Ord, Governor of the Straits Settlements. In the former place we had rifts expanding rapidly as they left the sun—one forms an angle of 90°, the sides of another being *parallel*—separating patches of corona, which in some places extends 2½ diameters of the moon from the sun.

At Whae-Whan we are told that at one particular moment of the eclipse "it was noticed that from several points in the moon's circumference darker rays emanated, extending to a considerable distance into space, and appearing like shadows cast forth into space by something not very well defined;" these dark rays afterwards "diminishing."

Now let us pass on to the eclipse of 1869. In two drawings made by Dr. Gould, in which the changes in the bright bundles of rays come out in a most unmistakable way, we get similar rifts, which changed as violently as did the rays; while in another drawing made by Mr. Gilman, the whole corona is furrowed by narrow rifts in all regions lying between violet, mauve-coloured, white, and yellowish white rays!

Now, what have we bearing on this point in the recent observations? No rift was *seen* in Sicily; one rift was recorded by the sketchers in Spain, but more than one rift was photographed in both places. We must remember, however, in thus bringing eye-sketches and photographs into comparison, first that the eye too often in such observations retains a general impression of the whole phenomenon, while the plate records the phenomenon as it existed at the time at which it was exposed; and secondly, that we know that the plates record chemically, while the eye records visually. We are dealing with two different kinds of light.

I will show you two photographs on the screen. Although the lucid intervals were very rare, we were fortunate enough to get one photograph of the coronal regions in Syracuse, and one in Spain. I now show you the photograph made by the American party in Spain. You see here that, probably owing to a cloud, we get a certain amount of light driven on to the dark moon, and you also see the indications of the rifts. This photograph was taken with an instrument with a small field of view, so that the most important parts of the corona were rendered invisible by the instrument itself.

Lord Lindsay, who also photographed in Spain, recorded no rifts.

In the other photograph, taken at Syracuse, the result is better. We have the equivalent of the rift in the photograph I showed you before. The instrument was extremely unsteady, and the definition not so good as it would have been if Mr. Brothers had had a good opportunity of displaying his skill. We get other fainter indications of other rifts here and there, and the question whether these rifts agree in the photograph taken in Spain with those in that taken in Syracuse is one of great importance; and it is to be hoped that before long it will be set at rest. Some observers think they agree; others think they do not.

But there is an important consideration based on that photograph, to which I must draw your particular attention. I have shown you the photograph as it may be thrown on the screen; but in the photograph itself there are delicate details which it is impossible to reproduce. The dark portions in the corona indicated in the copy I have shown you are merely the bases of so many dark wedges driving out into space, like their prototypes

in the Indian eclipse. It is Mr. Brothers's opinion, I believe, that all you see on the screen round the dark moon, all that enormous mass of light, nearly uniform in texture, and these beautiful broad rays between the rifts are really and absolutely parts of the solar corona. I confess I do not wish to commit myself to such an opinion. We want more facts, and the *onus probandi* lies with those who insist upon that view, and I have yet to hear an explanation of them on that basis.

h.—The Corona sometimes seems to be *Flickering or Rotating*.

We now come to the next point. Time out of mind, that is, for the last two centuries, the corona has been observed to be flickering, waving, or rotating, moving in every conceivable way and direction. In 1652 it was described as "a pleasant spectacle of rotatory motion." Don Antonio Ulloa remarked of the corona observed in the eclipse of 1788, "It seemed to be endued with a rapid rotatory motion, which caused it to resemble a fire-work turning round its centre." The terms whirling and flickering were applied in the eclipse of 1860. This extraordinary condition of things was also thoroughly endorsed by the late observations. It certainly exists, and is among the observations we have to take into account. When I saw an officer of one of the ships at Catania, I asked him if he had taken a drawing of the corona. "No," he said. I asked him, "Did you see any rays?" "Yes." "Then why did you not make any drawing of them?" His answer was, "How on earth could you draw a thing that was going round and round like a fire-work?" This was not the only observation of the kind, and the tendency of such observations I need hardly say is to strengthen a belief in the unstable, and therefore uncosmical, nature of their rays.

Is this variation of light due to the brilliancy of the corona, and the rapid change of the rays, which is one of the results which comes out clearest? In 1842 the brilliancy of the corona was stated to be insupportable to the naked eye. A similar remark was made to me by several of those officers who saw the last eclipse in Sicily.

J. NORMAN LOCKYER

(To be continued.)

SCIENTIFIC INTELLIGENCE FROM AMERICA*

PROF. LEIDY has lately announced to the Philadelphia Academy of Natural Sciences the existence of some new fossil mammals from the Tertiary formations of Wyoming Territory. One was a lower jaw, discovered by Dr. J. Van A. Carter in the vicinity of Fort Bridger. The animal to which it belonged was as large as a hog, but was more nearly allied to the rhinoceros or tapirs. It was especially remarkable for the possession of a large pair of front teeth, resembling, both in form and construction, the incisors of the beaver. The name proposed for it was *Togurus castoroides*, or the beaver-toothed gnawing-hog. Another of the fossils indicates a carnivorous animal, a contemporary of the former, and about the size of the gray fox. The animal was related to the weasel and canine families, and was called *Sinopa rapax*, the former name being that applied by the Blackfoot Indians to a small fox. Prof. Leidy also exhibited photographs of the lower jaw of the American mastodon, recently received from Prof. W. C. Kerr, State Geologist of North Carolina. The jaw was found in Lenoir County of that State. It belonged to a mature male, and was of special interest from its retaining both tusks, as well as the molar teeth.—Among objects of great ethnological import are the aboriginal inscriptions or carvings upon rocks, which are met with in North America and elsewhere, and are sometimes of a very remarkable character. Ordinary copies of such inscriptions, unless they be photographs, are rarely of sufficient accuracy to be of much value; and those of our readers who are likely to come across such inscriptions may like to know a method by which an absolutely perfect fac-simile can be made. This process has been applied with much success in copying carvings in Egypt and other places, and it will be equally serviceable in our own country. For this purpose the inscription is to be first well cleaned from dust or mud by means of a hard, stiff brush; stout, unsized paper is then to be wetted rapidly, but uniformly, in a tub of water, and applied to the inscription, and forced into the irregularities by repeated and forcible strokes with a hard brush, an ordinary clothes-brush being as good as any for the purpose. If the stone be clear of

* Communicated by the Scientific Editor of *Harper's Weekly*.

dust, the paper adheres, and, when dry, falls off, forming a perfect mould of the inscription. If the carving be deep or broad, it is sometimes advisable to apply several sheets of paper, one after the other, brushing over the surface of one with glue or gum before applying the next, so as to obtain, when dry, a firm body. By making a plaster cast of the paper relief thus prepared a fac-simile of the inscription will be obtained.—The present year seems to be marked with a great deal of activity and enterprise in researches connected with the natural history and physics of the deep seas, especially on the coast of America. We have already referred to the enterprise proposed by the Coast Survey, of sending a steamer, especially adapted to this purpose, around Cape Horn to the California coast, on a ten-months' journey, to be accompanied by Professor Agassiz and Count Pourtales, and a corps of assistants, all prepared to make observations and collections on the most perfect scale. The expense of the scientific work will, it is understood, to the amount of 15,000 dollars, be defrayed by Mr. Thayer (the same gentleman who supplied the funds for Professor Agassiz's expedition to Brazil), a sum which will probably enable Professor Agassiz to accomplish his object in the most perfect manner.—Professor Verrill and party, from Yale College, will also, it is expected, prosecute an exhaustive research into the deep sea and littoral fauna of the Vineyard Sound and the adjacent waters, in connection with the inquiries of the United States Commission of Fish and Fisheries relative to the decrease of the food fishes of our coast. Corresponding researches will also be carried on in the deeper waters of Lake Michigan, where, it may be remembered, the interesting discovery was made last year of crustaceans and fish of marine types at a depth of 300ft. and over. The inquiries this year will be under the immediate direction of Dr. Stimpson and Mr. Milner in a still deeper part of the lake, and it is not at all improbable that discoveries of the highest interest will be made.—The Arctic expedition of Captain Hall will also undoubtedly do its part in the general work, as the naturalist of the party, Dr. Emil Bessels, has had large experience in such labours, and is practically conversant with the fauna of the arctic seas from his connection with the Spitzbergen expedition of 1869.—At the June meeting of the California Academy of Sciences the subject of inviting the American Association for the Advancement of Science to meet in San Francisco in 1872 was discussed, and the treasurer was instructed to call upon the trustees, and to solicit the co-operation of the Chamber of Commerce in taking measures toward this object. The meeting for the present year will be held in August next in Indianapolis, and a large attendance is expected, especially of Western members, to whom the places of meeting in the East have generally proved too remote to suit their convenience.

SCIENTIFIC SERIALS

THE *American Naturalist* for June contains no article of very striking value, though several of interest in special subjects. Dr. Elliott Coues contributes an account of the yellow-headed blackbird, *Xanthocephalus icterocephalus*, first described by Prince Buonaparte in his continuation of Wilson's Ornithology.—An article on Cuban Seaweeds, by Dr. W. G. Farlow, includes outline drawings of a number of distinct types.—Dr. Lebaron describes a new species of moth, the larva of which is extremely destructive to young apple trees, which he calls *Tortrix malis orana*, or the Lesser Apple Leaf-folder.—Mr. E. L. Greene contributes June Rambles in the Rocky Mountains, with special reference to their flora.—From Dr. Henry Shimer we have "Additional Notes on the Striped Squash Beetle," and from Prof. W. H. Brewer, "Animal Life in the Rocky Mountains of Colorado."—A larger space than usual is occupied by Reviews, among which is one of Mivart's "Genesis of Species," comparing the views of the author with those of the American writers, Cope and Hyatt.

The first article in the *Journal of Botany* for June is an important one, by Prof. A. H. Church, on Sugar in Beet-root, with a record of investigations on the effect of the amount of rainfall in the development of the sugar.—Dr. Henry Trimen discusses the question, "Is the Sweet Flag, *Acorus calamus*, a Native?" showing that it was unknown in this country before 1596, and that it was not till about 1660 that it was reported as a wild plant from Norfolk. The plant appears to be originally a native of south-east Europe.—Prof. Dickson has an article on the Phyllotaxis of *Lepidodendron*, and the allied, if not identical,