These charts showed, by a new form of wind rose, recently adopted by the Meteorological Council, not only the frequency of the winds, but their strength, over areas contained by 3° of latitude and 10° of longitude. Isobars were also drawn on the charts so that the relation of the winds to the barometrical pressure could be compared. In the corners of the wind areas the percentage of fog and the number of weather observations were given. A small inset chart showed the temperature of the air, which was represented by isothermal lines, and the limits of fog were also indicated. (3) Sea surface temperature charts of the South Indian Ocean, between the Cape of Good Hope and New Zealand, for each month of the year.

Coming now to natural science, Dr. Woodward, F.R.S., showed a part of the collections made by Dr. C. I. Forsyth Major in Madagascar, 1894-95; and Dr. J. W. Gregory exhibited a geological map of part of British East Africa, with sketches, sections and specimens. The map showed the main features in the structure of British East Africa. The region consists of a plateau of Archean rocks (gneiss and schist) sinking beneath strips of Carboniferous and Jurassic deposits in the coastlands, and buried by piles and sheets of volcanic rocks in the interior. Volcanic activity probably lasted from the Cretaceous to the present day. The lavas have been ejected by plateau eruptions and by crater eruptions. The former poured forth sheets first of trachytoid phonolite, and then of basalt. The country is traversed by the Rift Valley, on the floor of which are thick series of lacustrine deposits; on its walls are the terraces of extinct lakes. Dr. Gregory also showed specimens of Hemiptera (*Flata nigricincta*, Walk.), the colonies of which resemble inflorescences. Mr. H. W. Seton Karr, and Sir John Evans, K.C.B., Treas.R.S., exhibited (1) palæolithic implements from Somaliland; (2) palæolithic implements from Somaliland, ogether with European, Asiatic, and African specimens for comparison.

Gold nuggets showing internal crystalline structure, formed an exhibit by Prof. Liversidge, F.R.S. The specimens (Australian) had been sliced and polished, and then etched with chlorine water or other reagents, so as to show the internal crystalline structure and the presence of enclosures of quartz, iron oxide, &c.

Prof. McKenny Hughes, F.R.S., exhibited (1) specimens illustrating the amount and mode of shrinkage of bog oak; (2) mulberry, showing symmetry in the twigs and asymmetry in the leaves; (3) travertine lining a wooden pipe, and reproducing all the details of the surface on which it was thrown down.

Photographs of "cup and ring" markings naturally formed upon stucco, were exhibited by Mr. C. Carus-Wilson. The wall of a house, built about forty years ago, was covered with stucco. Alternations of temperature, to which the face of the wall had been subjected, had rearranged the particles composing the stucco, producing linear and annular ridges and depressions similar to those occasionally seen on rock-faces, and usually ascribed to the hand of prehistoric man.

Prof. Ray Lankester, F.R.S., showed a cast of enlarged model (eight times natural size) of the type specimen of *Amphitherium prevostii* (lower jaw, Stonesfield slate). Casts taken direct from these very small jaws are of little use. Drawings necessarily fail to show clearly the modelling of the teeth. Accordingly Prof. Lankester has obtained, through the skill of Mr. Pycraft (one of his assistants in the Department of Comparative Anatomy, Oxford), a careful wax model of each of the unique Oxford mammalian fossil jaws, eight times the natural size. A coloured cast of the wax model of one of these jaws, the type specimen of Amphitherium, was exhibited, and similar casts will be offered to the chief European and American museums.

The Marine Biological Association had on view a series of specimens illustrating the boring habits of certain marine animals, amongst them being a series of shells showing the gradual disintegration due to the action of boring sponges. Some rare or interesting marine organisms recently found at Plymouth were also shown by the Association.

Mr. Walter Garstang demonstrated certain adaptations, subservient to respiration, in sand-burrowing Annelids and Crustacea. In aquatic animals which burrow in fine sand, the activity of the gills would be impaired by the accumulation of sand around the gills, or in the course of the respiratory currents. To prevent this, the water before passing to the gills is sieved in the Annelid *Aphrodite* by a felted mass of fine hairs, and in Decapod Crustacea by the hairs bordering the branchiostegite. In the crabs *Atelecyclus* and *Corystes* the normal respiratory current is reversed, and the water passes to the gills through a sieve-tube formed by the interlocking of rows of special hairs on the apposed antennæ. In *Atelecyclus*, which burrows to a shallow depth, the reversal of the current takes place only when the crab is imbedded; in *Corystes*, which burrows deeply, the antennal tube is elongated, and the reversal of the current is all but constant.

A wax model of a single electrical nerve cell from the spinal cord of *Malapterurus electricus* (River Senegal), and microscopic serial sections, was exhibited by Dr. Gustave Mann. The model was made from camera lucida drawings of a complete series of sections through the cell. It showed one axis cylinder process, and an enormous number of dendritic processes which in many cases are joined by their ends to form loops. The model was 500 times the natural size of the nerve cell.

A selection of the dried plants collected in Tibet by Mr. St. George R. Littledale, was exhibited by the Director, Royal Gardens, Kew. The plants were collected in the Gooring Valley, between Tengri Noor and Lhassa, in lat. 30° 12′ N., and long. 90° 25′ E., at an altitude of about 16,500 feet; they represented the general character of the vegetation.

Nuclear division in the spores of *Fegatella conica* was shown by Prof. J. B. Farmer. The spindle in these spores is of a very unusual form at first, but becomes normal subsequently. The primary cell wall remains free in the cytoplasm, and during the two second divisions of the nuclei it becomes rotated through an angle of 90°, and the spore is thus divided into four cells. The ultimate position taken up by the walls corresponds with that of a system of soap films, introduced into a box similar in shape to that of the Fegatella spore, when the cavity of the box is to become divided into four chambers by such films.

Mr. A. Francis Dixon showed a model to illustrate the method of reconstruction from serial microscopical sections by the use of glass plates. This exhibit illustrated a method of reconstruction which is especially useful in tracing the crossing and branching of fine structures, such as nerves and vessels in the embryo. The model was composed of a number of glass plates covered with a transparent varnish. On each plate was traced the outline of a portion of a section belonging to a series, multiplied in the case shown fifty diameters. The thickness of each glass plate was fifty times that of the section drawn on it. When the different plates were placed one over the other in order, a transparent model of the whole structure results, multiplied fifty times. The model shown illustrated parts of the distribution of the trifacial nerve in a rat embryo of the fifteenth day.

During the evening two lectures, with demonstrations by means of the electric lantern, took place. At one of these Prof. Meldola described the exhibits, by M. le Prof. Lippmann, of colour photographs by the interferential method. The photographs, which were projected upon a screen, represented stained glass windows, landscapes and flowers taken from nature, vases, and a portrait from life.

Experiments with liquid air were described by Prof. Dewar, F.R.S., at the second of the two demonstrations.

THE IRON AND STEEL INSTITUTE.

THE annual general meeting of the Iron and Steel Institute was held last week in London, commencing on Thursday, the 7th inst., and continuing over the following day. From the Report of the Council it would appear that the Institute is in a flourishing state. The membership is increasing, and naturally with it the income, whilst the expenditure shows a very remarkable diminution during the last two years. Those who are acquainted with this society know that this lessening cost of management has not been accompanied by any diminution of efficiency.

On the members assembling on Thursday morning, Sir Lowthian Bell occupied the chair in the absence of the President, Sir David Gale, who was prevented from being present by indisposition. The first business of the meeting was the presentation of the Bessemer medal, which had been awarded to Dr. Hermann Wedding, Professor at the Berlin School of Mines, in recognition of the services he has rendered to the iron and steel industries by his valuable contributions to metallurgical literature. An interesting feature in this ceremony was the presence of Sir Henry Bessemer, the venerable founder of the modern steel industry, who made a speech congratulating Dr. Wedding on being selected by the Council as the recipient of the medal.

The following list of papers to be read and discussed was on the agenda.

"On the Rate of Diffusion of Carbon in Iron," by Prof. W. C. Roberts-Austen, C.B., F.R.S.

"On some Alloys with Iron Carbides," by J. S. de Benneville, of Philadelphia.

"On Mond Gas as applied to Steel Making," by John H. Darby, of Brymbo, North Wales.

"On Hot Blast Stoves," by B. J. Hall, of Westminster.

"On the Hardening of Steel," by H. M. Howe, of Boston, U.S.

"On the Introduction of Standard Methods of Analysis," by Baron Hans Jüptner von Jonstorff, of Neuberg, Austria.

"On the Production of Metallic Bars of any Section by Extrusion," by Perry F. Nursey, London.

"On Mr. Howe's Researches on the Hardening of Steel," by F. Osmond, of Paris.

"On the Treatment of Magnetic Iron Sand," by E. Metcalf Smith, of New Zealand.

"On the Making of the Middle Lias Ironstone of the Midlands," by E. A. Walford, Banbury.

Mr. Hall's paper was first taken. It described a form of hot blast stove which has now been in use many years, the first, we believe, having been erected about twelve years ago. It is known as the Ford and Moncure stove, and is of fire-brick, having the ordinary chequer work, although the arrangement varies somewhat from the Cowper or Whitwell patterns, the chief difference being that the stove is divided by walls into four parts. The object is to give facilities for clearing from dust. When the change is made from gas to air the whole of the blast is passed through one of the four divisions, naturally in a very concentrated form. This blows the dust out of the chimney-top, or deposits it in the flues, from whence it can be removed at convenient times. Details given by the author showed that the stoves have a long life, a fact which is perhaps as much due to the excellent proportion on which they are designed as to any special novelty in the construction. From what was said during the discussion, it would appear that the dust-removing device answers satisfactorily.

The next paper taken was Mr. Nursey's contribution, which described a very interesting departure in the production of metal bars of various sections.

The author stated that the system of manufacture was the invention of Mr. Alexander Dick, the inventor of Delta metal. It related to the production of all kinds of metallic sections, from thin wire or plain bars to complex designs, by simply forcing metal, heated to plasticity, through a die by hydraulic pressure. He referred to the fact that although the principle of extrusion was employed in the manufacture of lead pipe and lead wire, yet the temperature was very much lower than in Mr. Dick's system, which required the metal to be red-hot, or about 1000° F. The process consisted in placing the red-hot metal in a cylindrical pressure chamber, or container, at one end of which is a die. Upon pressure being applied at the opposite end the plastic metal is forced through the die, issuing therefrom in the form of rods or bars of the required section and length. The container of the first apparatus made was a solid steel cylinder, bored out to the required diameter to form the chamber for the hot metal, and heated in a coke fire. In practice, however, it was found that the strain set up by the unequal expansion and contraction of the walls of the cylinder, added to that caused by the internal pressure applied to force the metal through the die, developed cracks in the cylinder which rendered it useless. After a long series of experiments with various kinds of steel cylinders, Mr. Dick abandoned the solid wall principle and devised a built-up container. It is composed of a series of steel tubes of different diameters, placed one outside the other, with annular spaces between them, these spaces being filled with a dense non-conducting packing. This device proved perfectly successful, and machines on this principle are now in operation on a commercial scale at the works of the Delta Metal Co., in Germany, and at one of the large Midland metal rolling mills. These machines are served by two men and one boy, so that the cost of labour per ton is very small. The author described the working of the system, and referred to the great variety of sections, some of a very complex nature, produced in Delta metal, brass, aluminium, aluminium bronze, and other alloys and metals, samples of which were exhibited on the table of the theatre. They ranged from wire weighing about 1/100 of a pound per foot run, to heavy rounds, squares, and hexagons weighing 40 lb. and over per foot run. Among the examples was a complex moulding that could not possibly have been made by rolling in the usual way followed for making metal articles of this nature. Mr. Nursey pointed out that the pressure put upon the metal greatly increased its strength, and at the same time rendered it still more homogeneous. Some tests made at Woolwich Arsenal with Delta metal bars produced by extrusion showed a tensile strength of 48 tons per square inch with 32·5 per cent. elongation on 2 inches, as against 38 tons per square inch tensile strength and 20 per cent. elongation of rolled bars of the same metal. The author concluded by stating that Mr. Dick was engaged on experiments with the view of producing sections in iron and steel similar to those at present turned out in Delta metal.

In the discussion which followed the reading of Mr Nursey's paper, Mr. Snelus described a process of covering telephone cable with lead, somewhat analogous to that referred to by the author. This cable contained over 150 wires, and was three inches in diameter. The fluid lead was pressed over it through dies. The great difficulty in all processes of formation by extrusion is to get a material for making the dies which will stand the hard usage to which they are put. Mr. Dick uses tungsten steel, a very hard material which does not require tempering; this, it seems, is good enough for Delta metal, one of the many new bronzes, and for the other materials mentioned. But if it were necessary to deal with metals having a higher melting point, a still more refractory metal would be required, and one of equal hardness, as the dies must not only withstand heat, but erosion. Mr. Snelus was of opinion that if the container, or cylinder, used for forcing out the fluid metal, were made of some highly refractory earth, that steel pipes could be made in this way. That, of course, would be a great commercial success, for not only could the pipes be cheaply manufactured in long lengths, but the quality would doubtless be much improved. In the present day of water-tube boilers this is a matter well worth considering. The difficulty in making steel tubes, however, does not appear to rest with the production of a refractory container. Mr. Dick said that he had made steel bars by extrusion, although it was done accidentally, and the trouble was, not that the cylinder gave way, but that the dies would not stand the work; if, therefore, an ingenious metallurgist can discover an alloy as hard as tungsten steel, and more refractory, he will possibly make a considerable fortune.

Mr. Metcalf Smith's paper was next taken. The author described the method adopted in New Zealand of smelting, or perhaps one should say melting, the iron sand found so largely in that country. The paper stated that the sea cliffs on this part of the coast consist of a combination of silica sand and a rich magnetic iron sand; the gradual crumbling of these cliffs, together with large quantities of iron sand brought down by the rivers and streams, draining the slopes of Mount Egmont, result in a deposit of almost pure iron sand on the beach, a large proportion of the lighter silica sand being washed out to sea. Excavations have been made on the beach showing a depth of iron sand of fourteen feet, whilst the same material has been dredged up at a distance of three miles out to sea. Nature seems to have devised this district most fitly for an iron industry; for not only are these vast deposits of magnetic iron so easily obtainable, but in close proximity there are extensive coal beds. There is also limestone containing 88 per cent. of calcium carbonate, timber for charcoal if required, and, indeed, provision for supplying all the needs of iron manufacture. Here is an analysis of the iron sand, made by Sir James Hector:

Peroxide of iron } Protoxide of iron }	82·0
Oxide of titanium	8·0
Silica	8·0
Water and loss	2·0
	100·0

Of course iron sand is known in other countries besides New Zealand, and efforts have often been made to smelt it. The difficulty, however, has been that it comes down and chokes the furnace when melting begins, so that it descends to the hearth unreduced. This is got over in New Zealand by kneading it into bricks with clay, which is found close by. In this way hard and compact lumps are procured, which will stand the pressure and grinding action in travelling through the furnace. One ton 12 cwt. of iron sand is mixed with 10 cwt. of clay; and in this way, what is equivalent to a very rich ore is produced. The pig iron made gives an excellent analysis. It is not, however, necessary to smelt all the iron sand in this way, for a certain part of it can be mixed with fluid iron, tar being added. The liquid metal will melt and absorb the iron sand, the tar giving sufficient carbon to retain the metallic iron in a fluid state. There is, of course, a saving in cost in this method of procedure, and the metal may be run direct for castings, thus avoiding the loss in re-melting. Bar iron is made by puddling from tarred iron sand and smelted metal. In the Siemens furnace, also, the same method of procedure is followed. Figures are given in the paper as to the cost of these processes, but the most remarkable details are those referring to the quality of the product. Thus we are told that by the treatment described, bar iron, equal in quality to BBH, can be produced for £7 per ton, and wrought iron, which will give what the author truly described as "the extraordinary tensile stress of 52 tons to the square inch." One would be inclined to describe this tenacity in wrought iron, not only as extraordinary, but as almost incredible; at any rate, one would wish to see the test authenticated by at least more than one experimenter of high reputation before accepting it as unquestionable. This would be more especially the case if, as we understood the author to say, the elongation was 33½ per cent.

Mr. Walford's paper was next taken. Its object was to describe the character of the Middle Lias ironstone of the Midlands and its organic origin, and the making of the stone and its ferruginous changes.

At the conclusion of the reading of this paper the meeting adjourned until the next day.

On the members again assembling on Friday morning the paper of Baron Jüptner was the first taken, being read by Mr. H. Bennett Brough in the absence of the author. This was a very long contribution consisting of thirty-six pages, but, as was said during the discussion which followed its reading, it was not a word too long. The subject is one of great importance, and has been far too long neglected. The want of uniformity in analysis has led to much confusion and consequent loss of money in the iron and steel industries. In a general description of the meeting, such as this, it would be impossible to do justice to a subject of this magnitude, and at present we can only make brief reference to the proposals contained in the paper, hoping to return to the question so as to deal with it at greater length on a future occasion. A large part of the paper was occupied in giving examples of discrepancies in analyses; thus, in an instance quoted, a chill roll was examined in two laboratories, and quite incredible differences were obtained. In one case the carbon was returned as 3·5 per cent., in another 2·785 per cent. Silicon in the first analysis was given at 1·3 per cent., the second laboratory gave 0·668 per cent. Other instances almost as striking were quoted by the author. What is proposed now to be done is to establish an international laboratory in Switzerland. All the important nations are to nominate honorary directors of work. For the purposes of making analyses, however, paid investigators will be necessary. Dr. Wedding, who spoke during the discussion, said that it was estimated the cost would be about £3000 a year, and he thought that if 300 of the principal iron and steel works in the world would contribute yearly £10 apiece, the work for a period of ten years could be done. Sir Lowthian Bell was of opinion that there should be no difficulty in getting this amount of money, and promised that his own works should contribute. It is perhaps unnecessary to point out that English iron and steel works are in some cases—there are, of course, notable exceptions—lamentably deficient in the scientific department. Mr. Stead, whose experience is very wide, and who speaks as a disinterested observer, said that in some establishments of considerable importance the chemist only received a salary of £100 a year. How can a man be expected, not only to work with that enthusiasm with which all scientific men must work for their labours to be effective, but to keep abreast of knowledge by the purchase of books, and subscriptions to technical or scientific societies, on such a stipend as this, which can allow no surplus after the barest necessities of life have been supplied? Mr. Stead pointed out that technical libraries were not common enough in this country, and he would suggest that in all large manufacturing centres libraries of that nature should be instituted. This, however, would not quite meet the difficulty. Abroad, especially in Germany, one finds iron and steel works have libraries of their own, the collection of books they possess being sufficiently large in most cases to be dignified by the name. Unfortunatel in England, beyond a few elementary treatises or text-books, very little literature is seen in the laboratories, the chemist too often contenting himself with following well-known and stereotyped methods of analysis, and not troubling himself with any original work which might lead to fresh industrial developments. A good deal has been heard lately about German competition in the iron and steel trade, and there has been an inclination to attribute it to higher wages paid in this country. It may be, however, that there is something to be said not only against labour, but against capital in this matter; and certainly German steel makers have gone ahead of those in England in many cases. We have in mind, perhaps just now more especially, the development of the basic steel industry, the invention of which originated in this country. By the exercise of greater foresight, greater enterprise, and improvement in processes, Germany has gained a commercial advantage from which England is now suffering. In the discussion that followed the reading of the paper, one or two suggestions were made which should be put on record. Prof. Arnold drew attention to the effect of segregation, of which he has met with some striking examples of late. In a tyre examined, sulphur was in one case 1 per cent.; in another sample, taken an inch and a half from the first, the sulphur was ·043. Mr. R. A. Hadfield said that allowance should be made for previous treatment of metal, and, in considering the history of a sample, its size, previous mechanical treatment, and from what part of the ingot it was taken, should be noted. Dr. Readel was of opinion that the iron and steel industry was behind other industries in devising standard methods of analyses. The British Association Commission, he said, did good work, but there was the defect of want of organisation. Each member went on his own line, so that the same ground was covered more than once. An orderly scheme of procedure was the first thing necessary, certain work being allotted to different individuals; he had had, recently, occasion to look into the subject of chromium, and had found even for this metal some thirty or forty processes for determining its presence. What was necessary was that some one with authority should make a selection showing that which might be the most desirable to retain. Mr. Ainsworth made a suggestion which it is to be hoped will not be lost sight of. The accumulated funds of the Institute are about eight or nine thousand pounds, and with the improved management of the present day, the sum is likely to be increased at a rapid rate. Mr. Ainsworth pointed out that it is not desirable to hoard this money, and no better means could be devised for spending it than bringing out of the present chaos an orderly method of chemical analysis. The suggestion was warmly supported by the Chairman, Sir Lowthian Bell.

It may be said that chemical analysis has fallen somewhat into disfavour with iron and steel makers of late, and also with engineers, the tendency being to trust wholly to physical experiment, aided latterly by microscopical examination. It is certain, however, that nothing can take the place of chemistry in metallurgical research; and the disfavour with which it is now regarded is not the result of faults inherent to the system of chemical examination, but to the imperfect manner in which it is carried out.

Mr. Darby's paper was taken next. It described a process which promises to be of great importance in the iron and steel trade, by means of which sulphate of ammonia is obtained from producer gas without the gas being rendered unfit for steel making. For many years steel makers have had such a process in view, and experiments have been made with a view to bring it to practical shape. So far as we are aware, however, they have all hitherto resulted in failure, or, at any rate, have not been a commercial success. Mr. Darby's experiments, however, go to show that Dr. Mond has solved the problem. We have not space to enter into details here, but must refer our readers to the very interesting paper which will be published in the *Transactions*, and in which the method of working the apparatus is shown by a diagram. Although the experiments of Mr. Darby were carried out on a practical scale, the furnace was a small one; but this was rather against the process, as it is more difficult to work a small steel furnace, and keep the metal fluid, than a large one. The plant required for carrying out the process is undoubtedly very costly, but as the return in ammonia will enable a dividend of 25 per cent. to be paid on the outlay, there doubtless will be little difficulty in finding the money in large steel works. It is to be hoped that the English steel makers will not neglect to inquire into and consider this opportunity of adding to their returns, and will not once more allow the foreigner to develop a system originally devised in this country.

In the discussion on the paper, several steel makers, who had seen Mr. Darby's plant in operation, spoke as to the excellent way in which the furnace worked when using gas which had been treated for the extraction of the ammonia.

Prof. Roberts-Austen next gave a brief address on the diffusion of carbon in iron, he not having prepared a paper in the usual way. The subject has recently been described by the same author in the Bakerian Lecture of the Royal Society and will shortly be treated in these columns; it is therefore unnecessary for us to go into the matter on the present occasion.

The remainder of the sitting was almost wholly occupied by the reading and discussion of M. Osmond's and Mr. Howe's papers, the paper of M. de Benneville being taken as read. It would be impossible at the end of a report of this nature to deal with the highly controversial matters which form the subject of these two papers; and indeed, without the introduction of the micro-sections supplied by Mr. Howe, the matter would not be intelligible. The allotropic theory of the hardening of steel, which has already caused so much discussion, did not appear to be carried very much further on Thursday last, or, at any rate, the majority of those present at the meeting did not seem to see their way much further towards the end of the problem. M. Osmond welcomes Mr. Howe as a friend and ally. He looks on the latter's carbo-allotropic theory as not antagonistic to his own. The discussion was confined principally to Prof. Arnold and Mr. Hadfield, who are the chief opponents of the school represented principally by M. Osmond and Prof. Roberts-Austen, now, we suppose, with Mr. Howe as an ally.

The summer meeting of the Institute is this year of an unusually ambitious nature, and will be held in September in Bilbao, a steamer having been chartered for the conveyance of members to that port. The vessel is the Orient liner *Ormuz*, which will also serve as a floating hotel for members during the meeting.

A REMARKABLE DUST-STORM.

THE American journal *Electricity* for February 19 contains an account of an unusual kind of storm which occurred in January of this year. The details were communicated by L. H. Korty, telegraph superintendent of the Union Pacific System, of Omaha, Neb. It was on the telegraph lines of this system between Weber and Peterson, Utah, that considerable difficulty was experienced in working, owing, as it is stated, to the peculiar character of the storm in question. The description is as follows:—

"On the afternoon of January 16, a very peculiar rain-storm occurred in Eastern Utah and Western Wyoming, along the Union Pacific Railway, extending from Ogden, Utah, to Evanston, Wyoming, a distance of 75 miles. The rain consisted of salt water or brine. The clothing of persons exposed to the shower had, when dry, the appearance of having been sprinkled with whitewash. The windows in the stores and residences at Evanston were so encrusted with salt deposit as to make it impossible to look out. Dr. C. T. Gamble, of Almy, Wyo., a gentleman of undoubted trustworthiness, states that the storm deposited in Almy alone 27 tons of salt. 'This assertion may appear fabulous,' says the doctor, 'but nevertheless is true, as it has been proved by carefully estimating the quantity on a given surface in different parts of the camp. The area of Almy is something over nine miles, and three tons to the mile would make 27 tons of the sodium deposited. The salt if collected and sacked would make ten ordinary wagon-loads. Those who doubt the above statements, go to figuring.'

"The salt-storm lasted about two hours. After it had ceased raining, the sun came out, and as fast as things dried they turned a whitish colour, and it was found that everything was covered with a thick coating of salt. Cars, buildings, trees, telegraph poles, insulators and wires all looked ghastly in their white coats. Through Weber Cañon the salt storm turned into snow later. A peculiar effect of the salt deposit on the telegraph poles, arms and insulators through Weber Cañon was noticed in operating the wires. During the day, when the sun came out, the wires worked clear and without interruption, while at night, when it turned cold, the wires were rendered unserviceable, which was attributed to the fact that the snow, having melted, some during the daytime and again freezing at night, created a moisture in conjunction with the salt deposit underneath, so as to entirely destroy the insulation of the wires. After several unsuccessful attempts to remove the cause of the trouble, an engine with a pump and long hose was sent over the line, and the deposit thoroughly washed off the poles and fixtures for a distance of 40 miles. The wires of the Rio Grande Western Railroad between Ogden and Salt Lake City were slightly affected in the same way, as were also those of the Southern Pacific for a short distance west of Ogden."

It has been suggested, as an explanation of the facts, that the salt was raised in vapour over Great Salt Lake, and was carried by the wind and deposited over the country for many miles to the eastward. This, of course, could not have happened, as *salt could not be raised in vapour*. It seems likely, however, that the white residue may have had the appearance of salt, but was not actually salt. Would not a more reasonable explanation be that fine white dust in the region about the lake may have been carried into the upper regions by the wind, and after traversing some miles brought to earth again owing to the condensation of the vapour surrounding them?

SCIENCE IN THE MAGAZINES.

THIS month's magazines contain numerous articles on scientific topics or with scientific bearings. Röntgen photography naturally forms the theme of several contributions. The *Quarterly Review* contains a short descriptive account of methods employed, results obtained, and theories propounded, and even blossoms into illustrations reproduced from radiographs taken by Mr. A. A. C. Swinton. The *Century Magazine* has "a Symposium on the Röntgen Rays," the writers being T. C. Martin, R. W. Wood, Elihu Thomson, Sylvanus P. Thompson, J. C. McLennan, W. J. Morton, and Thomas A. Edison. The result of this composite article is vain repetition of experimental conditions, and a confusion of tongues; Prof. Thompson referring to pictures obtained by Röntgen rays as "sciographs," while other writers describe them as "shadowgraphs," and all the illustrations are designated "cathodgraphs."

Dr. St. George Mivart writes on "Life from the Lost Atlantis" in the *Fortnightly*, his paper being concerned chiefly in pointing out the significance of the discovery of *Cænolestes obscurus*, a still-existing survivor of Ameghino's Epanorthidæ, and the representative of a new family of recent marsupials, described by Mr. Oldfield Thomas before the Zoological Society on December 17, 1895.

"This little, apparently insignificant, mouse-like creature," to quote the author, "turns out to be an animal of extreme interest, for it affords strong evidence that what we now know as South America and Australia must have been connected, and the Atlantic at least bridged by dry land, if even an Antarctic continent may not have existed, of which South America and Australia are divergent and diverse outgrowths."

Mr. G. E. Boxall puts forward, in the *Contemporary*, the view that the vast sedimentary plains of Australia, which thirty years ago were so "rotten" that no stock could be kept upon them, have been trampled into compactness by large herds of cattle and sheep. He gives reasons for believing the dry plains of Western Australia to be similar to those described by Oxley and others as once existing in the delta of the Murray, where about one hundred millions of sheep are now pastured, besides large herds of cattle and horses; and therefore he thinks that the present sandy plains will sooner or later be consolidated and rendered secure for stock. He concludes:

"The plains of Australia are, from the accounts given of them by explorers in all parts of the continent, singularly alike, and if the plains of Northern and Western Australia can be consolidated by the trampling of stock, as I believe those of the eastern districts have been, the time is not far distant when the word 'desert' may be wiped off the map of Australia, and the true character of its vast plains become more generally understood and appreciated."

Psychologists will be interested in a paper by Mr. Havelock Ellis, in the same review, on "The Colour-Sense in Literature." Mr. Ellis has examined the works of a series of imaginative writers, usually poets, dating from the dawn of literature to the present time, and has noted the main colour-words that occur, and has also noted how these words are used. His paper