applied for permission to examine the inmates of the Perkins Institution for the Blind in South Boston, and was enabled to take notes of 183 cases, all but one of which he personally examined. The single exception was absent at the time of the visit, but his recorded history left no doubt as to the cause of his loss of sight. Following the classification of Magnus, Dr. Derby divided these cases into four classes: I. Congenital blindness; II. Blindness in consequence of idiopathic diseases of the eye; III. Blindness of traumatic origin; IV. Blindness attributable to general disease.

It is with the figures in the second class that we are more immediately concerned, and especially with those of blindness dependent on the ophthalmia of new-born children. There were 34 such cases out of 183, being a percentage of about 18.6. This is, however, a smaller proportion than has been obtained by other observers, and can only be accounted for by the limited number of individuals he was able to examine. At the Sheffield School for the Blind, Mr. Snell found 38.3 per cent blind from this cause, and observers in general estimate that some 30 per cent of all blindness is due to this disease. Even the examination at South Boston reveals the fact that at least one in every five of the inmates of the institution need not necessarily have ever come there. For it is an established fact that the ophthalmia of new-born children can, with few exceptions, be successfully prevented when there is reason to apprehend its occurrence. It is also not an exaggeration to claim that hardly a disease of the eye yields with more certainty to appropriate treatment. Modern observers are united in the belief that efforts at disinfection should mainly be directed to the eyes of the child, which are most apt to receive the poisonous matter after birth. Such being the case, is strict cleanliness alone sufficient, or should an active disinfectant in addition be employed?

Experiments carried on by different observers have demonstrated that the purulent infection of the eyes of new-born children can be reduced to a minimum by the use of a disinfectant, and that the most efficacious disinfectant is the nitrate of silver. Simple cleansing of the eyes with water was found by Bischoff to reduce the number of cases only one-half. Crede, the original proposer of the use of nitrate of silver, had, before the introduction of prophylaxis, 314 cases among 2,897 children, 10.8 per cent. After beginning to use the 2-per-cent solution of nitrate of silver, he had but from one to two cases in 1,160 children, being 0.1 to 0.2 of one per cent. Other agents have been tried.

In the present state of our knowledge, it is not presumptuous to assert that a case of this disease, terminating in a manner fatal to sight, and treated without topical applications of nitrate of silver, would be regarded as having been culpably neglected. So much for the principal factor that operates in causing preventable blindness. Of that from trachoma it is less necessary to speak, as that disease appears to be greatly decreasing in this community. The greater care used in the regulation of emigration, the gradual improvement in the housing and sanitary surroundings of the poor, and the discovery of jequirity as a remedy, are all working such a change for the better that one is almost justified in looking forward to a time when "granular lids" will be a tradition of the past. There is but one other cause of preventable blindness on which Dr. Derby briefly dwelt, — traumatic sympathetic ophthalmia, — of which he found 12 cases at the Blind Asylum, something over 6 per cent of all affections investigated. With young children the occasion for the occurrence of this disease is most frequently the wounding the other eye by forks, scissors, and knives carelessly left in their way. It can be guarded against by the timely removal of the injured eye.

To sum up the results of his investigation, Dr. Derby found 34 cases of ophthalmia neonatorum, 4 of trachoma, and 12 of the results of sympathetic ophthalmia,— together, 50 instances of preventable blindness; in all, 27 per cent of the inmates of the South Boston Asylum who need never have gone there had they received suitable care or enlightened treatment at the proper time. To diminish such a percentage in the future, the more careful medical education of the present day will not alone suffice. Those who propose to follow the profession of nursing must also be properly instructed, and some degree of knowledge on these subjects be diffused in the community.

SUGGESTIVE THERAPEUTICS. — Binswanger, in the *Therapeutische Monatschrift*, Heft iii., 1, 2, 3, 4, 1889, warns against the inconsiderate and incautious employment of hypnotism. He says that hypnotism under all circumstances has a disturbing effect upon the mental condition, and that subjects of experiment are always transiently hysterical, that the results in different individuals cannot be predicted, and that unfavorable results may follow. He further says, according to the *American Journal of Insanity*, that in severe hysteria is the chief ground for suggestive treatment, where the hypnotic suggestion is the most effective and the least dangerous. When other methods are available for cure, hypnotism is not needed, and in hysteria minor it should be kept in mind that the possibility of a transition into hysteria major cannot be excluded in the use of hypnotism.

OXYGEN INHALATION. — The opinions held among medical men concerning the therapeutic value of inhalations of pure oxygen are so various that any careful observations upon the subject are worthy of attention. In the *Practitioner* (August, 1889) Dr. Thompson discusses the subject from a theoretical point of view, and gives also the result of experiments upon animals and of observations upon patients. From experiment, and from consideration of the laws of physics as they bear upon the absorption of oxygen by the blood, it is quite evident, that, if an animal in a state of perfect health is made to breathe pure oxygen at the pressure under which this gas exists in the atmospere, but very little more oxygen will be taken into the blood than if it breathed common air. In order to make any considerable amount enter the blood above that which is usually absorbed by it, a degree of pressure is necessary which causes mechanical interference with circulation and respiration. The old idea that animals cannot live in an atmosphere of pure oxygen is erroneous. As might be expected from the foregoing statements, it is now proven that animals can live for many hours in pure oxygen, under ordinary atmospheric pressure, without any symptoms or appreciable change, provided the CO_2 exhaled and the nitrogenous waste products of the body be removed. The vague and inconstant sensations, experienced by healthy persons who inhale pure oxygen freely, may be due to impurities contained in it. Practically, Dr. Thompson, as we learn from a summary in *Medical News*, has found the inhalation of oxygen valuable in many cases. In anæmia and chlorosis he has derived no decided benefit from it. In malignant diphtheria with rapid respiration, subjective dyspnœa, and cyanosis, relief was afforded only to the subjective dyspnœa, the cyanosis remaining the same, and the patient dying from pulmonary œdema and heart-failure. In a case of illumination-gas poisoning, with persistent unconsciousness and subsequent pneumonia, the continuous inhalation of oxygen had no effect whatever, either upon the breathing or upon the cyanosis which occurred during several attacks of pulmonary œdema. In a case of malignant endocarditis, with extensive valvular disease and dilatation, oxygen failed to relieve the dyspnœa, either before or after obstruction occurred in the lungs. In pneumonia, with rapid breathing, dyspnœa, and cyanosis, he has often found oxygen of very great value. The dyspnœa may diminish, while the cyanosis quickly vanishes, and the respiration becomes slower and more natural. So also in capillary bronchitis and asthma, especially when it is accompanied by much bronchial secretion. In uræmic dyspnœa he has found it of great use. In one such case, with normal lungs and very intense dyspnœa, lasting for three days, each inhalation of oxygen was followed in fifteen minutes by slowing and quieting of the breathing, slight improvement in the cyanosis, and great increase of comfort to the patient. Upon stopping the inhalation, the dyspnœa always returned. A bibliography of the subject is appended to the article.

NOTES AND NEWS.

THROUGH the efforts of Professor J. E. Denton, Stevens Institute is to have a new foundry and machine-shop. The building will be 40 feet long by 26 feet wide, and will adjoin the end of the main shop. It will be two stories high. The lower floor will be used as a foundry and blacksmith's shop, and the upper floor for wood-turning and carpentry.

— Mr. C. L. Heisler of Cornell is building a new form of calorimeter of his own design.

— Ernest G. Merrit of Cornell has been appointed instructor in physics at that university.

— Harris J. Ryan, M.E., instructor in physics at Cornell, has been appointed assistant professor of mechanical engineering.

— E. P. Roberts, M.E., last year assistant professor of electrical engineering at Cornell, is now with the Brush Electric Light Company, Cleveland, O.

— A new Yale movement, proposed by prominent graduates and patrons of the university, is for the establishment of a department of music, to be liberally endowed.

— Professor W. O. Atwater has been appointed director of the New Jersey Agricultural Experiment Station at Rutgers College. If he accepts, he will also retain his place at the head of the Washington Station.

— Francis John Henry Jenkinson, M.A., fellow of Trinity College, has been elected without opposition to the office of librarian of Cambridge University, England, vacant by the resignation of Professor Robertson Smith.

— During the summer, Professor Ryan and Mr. Merrit of Cornell were at work on alternating-current curves and converters. The results are very satisfactory, and will be published in a short time, says *The Crank*.

— The cap and gown movement at Johns Hopkins has received a setback. The class of '90 has voted against it, and the junior class has followed the example. The freshmen are not strong enough to make the movement a success.

— Dr. Albert Shaw is delivering at Cornell a series of lectures on the results of his fifteen months of study of European cities. It is rumored that he is likely to be called to the chair of political economy, left vacant by President Andrews of Brown.

— At a meeting of the New York Electrical Society in Clinton Hall on Oct. 24, Mr. A. A. Knudson read a paper descriptive of the recent electrical exposition at St. John, N.B., of which he had charge; and Mr. Joseph Wetzler, who had just returned from the Paris Exposition, described some of the electric plants and installations he had visited in Europe.

— Gen. M. C. Meigs of Washington has published a chart giving a graphic and tabular representation of the progress of population in the United States from 1750 to 1990, showing clearly the results of his study of the subject. To this he has added some notes of Great Britain, of Europe, of Spain, and of France, showing the law of population. While England doubled in forty years, Great Britain and Ireland required sixty-six years to double, owing to the decrease of the Irish population in their original seat.

— The *Student* of Amherst is advocating the formation of State clubs in the college similar to the organizations in other colleges. It says, "We have thirteen men from Connecticut. Why can't they defy fate and organize a thirteen club? Illinois sends eleven students who could influence others in that State to 'come East' to college; New York State sends sixty-one, whose influence could certainly be brought to bear upon the preparatory schools in the large cities, showing the advantages to be derived at Amherst. Other States send from seven to fifteen men each."

— From a series of experiments in preventing the injuries of the plum curculio, Mr. Clarence M. Weed, of the Ohio Agricultural Experiment Station, has arrived at the following conclusions: (1) that about three-fourths of the cherries liable to injury by the plum curculio can be saved by two or three applications of London-purple in a water spray, in the proportion of one ounce to ten gallons water; (2) that a sufficiently large proportion of the plum-crop can be saved by the same treatment to insure a good yield when a fair amount of fruit is set; (3) that, if an interval of a month or more occurs between the last application and the ripening of the fruit, no danger to health need be apprehended from its use; and (4) that spraying with the arsenites is cheaper and more practical than any other known method of preventing the injuries of this insect. The experiments were carried on through two seasons, upon two varieties of cherry-trees and four varieties of plum-trees, during which a grand total of 65,500 cherries were individually examined. They are described in full in Bulletin No. 6, Vol. II., of the Ohio Station.

— Some Italian observers have been recently testing the senses of criminals, and they find these duller than in the average of people. Signor Ottolenghi, in Turin, found last year a less acute sense of smell in criminals; and he now affirms the same for taste, which he tested, according to *Nature*, by applying bitter and sweet substances (strychnine and saccharine) in dilute solution to the tongue. He finds also the taste of the habitual criminal less acute than that of the casual offender, and a slightly more acute taste in male than in female criminals. Experiments with regard to hearing were made by Signor Gradenigo (also in Turin); and, of 82 criminals, he found 55 (or 67.3 per cent) to have less than the normal acuteness, the greatest inferiority being in the oldest. In female criminals the relations were somewhat better: 15 out of 28 had hearing under the average. The limits of variations in acuteness also appeared to be much wider in criminals than in normal persons. Ear-disease was common. Signor Gradenigo attributes these things to bad hygienic conditions of life, and vicious habits.

— The projected course in military science and tactics at the Sheffield Scientific School has not yet been completed. Lieut. Totten is reported in the *Times* to say, "The course as it is crystallizing tends toward a discussion of military economy in reference to this country. In handling the American military problem, I shall attempt to discuss re-organization rather than the organization as it now stands. The topics which are so ably treated of in the magazines will be avoided, as the magazines are at the disposal of all. In discussion of tactics I shall avoid the American definition, which is mere 'drill,' preferring the European idea of 'use,' illustrating the tactical use of infantry by reference to the Turko-Russian war, and the tactical use of artillery by reference to the Franco-Prussian war. The United States is behind the times in the military line. This course of instruction is an important one, and I shall do all in my power to awaken the students to the military needs and possibilities of this country. We have not yet made any arrangements for the organization of a military company at Yale, but I should like nothing better than a splendid battalion, worthy of the institution." It is expected that the course will consist of twelve lectures, to be delivered weekly, beginning early in January.

— In a recent bulletin of the Ohio Agricultural Experiment Station, a number of experiments to determine the preventive or remedial value of various methods recommended to prevent the injuries of the striped cucumber beetle are described. They were carried on under the direction of Mr. Clarence M. Weed, entomologist and botanist of the station. These methods were, for the sake of convenience, divided into four classes: 1. The use of offensive odors; 2. Mechanical coatings of the leaves; 3. Poisonous coatings of the leaves; 4. Enclosing plants under tents or gauze-covered frames. The experiments were made on a large scale under ordinary field conditions, during the summer of 1889, when the striped beetles were exceedingly abundant. Five substances of the first class were tested; viz., hen-manure, cow-manure, kerosene, carbolic acid, and bisulphide of carbon. None of these proved practically successful. Three substances of the second class were tested; viz., coal-soot, gypsum, and saltpetre. Of these, coal-soot and saltpetre proved worthless, while gypsum showed some beneficial effect, not sufficient, however, wholly to save the plants. Three substances of the third class were applied; viz., pyrethrum, slug-shot, and peroxide of silicates. Pyrethrum killed those beetles with which it came in contact when first applied, but soon lost its efficacy. Slug-shot injured the plants to which it was applied. Peroxide of silicates had a decided effect in preventing injury, and, where the plants had been well started before being attacked, saved them from destruction; but it did not save them where the beetles were so numerous that they burrowed down to meet the sprouting plants. The results obtained from the fourth method, that of fencing out the insects by covering the plants with some form of tent or gauze-covered frame, were by far the most satisfactory. The cheapest and most successful method employed is that of

protecting each hill by a piece of plant-cloth or cheese-cloth about two feet square. This may be done simply by placing it over the plants, and fastening the edges down by small stones or loose earth. It is better, however, to hold it up by means of a half barrel-hoop or a wire bent in the form of a croquet arch.

— Since the Johns Hopkins Hospital was opened, the *Times* reports that over 400 patients have been received. It now contains 109. The training-school for nurses is making good progress. Arrangements are being made to publish regularly the discoveries and observations of the experts of the hospital. This publication department is expected to be of value to medical literature. The *Bulletin* will be issued monthly, and will correspond with the *Circular* of the university, but other more important papers will be added from time to time. In the *Bulletin* will be the proceedings of the newly organized medical society. This society is modelled on the plan of the one connected with the Charité of Berlin; and its object is to bring the men connected with the hospital into closer connection, to stimulate research, and to protect the claims of priority of work done by the members. Dr. Welch is the president, and Dr. Robb is the secretary.

— A new soft alloy, which adheres so firmly to metallic, glass, and porcelain surfaces that it can be used as a solder, and which, in fact, is invaluable when the articles to be soldered are of such a nature that they cannot bear a high degree of temperature, consists of finely pulverized copper dust, which is obtained, according to *Iron*, by shaking a solution of sulphate of copper with granulated zinc. The temperature of the solution rises considerably, and the metallic copper is precipitated in the form of a brownish powder; twenty, thirty, or thirty-six parts of this copper dust, according to the hardness desired, being placed in a cast-iron or porcelain-lined mortar and well mixed with some sulphuric acid, having a specific gravity of 1.85. To the paste thus formed are added seventy parts by weight of mercury, with constant stirring; and, when thus thoroughly mixed, the amalgam is well rained in warm water to remove the acid, and then set aside to cool. In ten or twelve hours it is hard enough to scratch tin. On being used, it is heated to a temperature of 375° C., and, when kneaded in an iron mortar, becomes as soft as wax. In this ductile state it can be spread upon any surface, to which, as it cools and hardens, it adheres with great tenacity.

— Professor Arthur Winslow, who was lately elected State geologist of Missouri, has established his headquarters at the State capitol. The State appropriated $20,000 for the maintenance of a geological bureau during the years 1889–90. In 1873–74 Professor Broadhead made a partial survey of some portions of the State, but for lack of funds was unable to continue the same. The United States Topographic Survey covers the counties of Jasper, Barton, Vernon, Bates, Cass, Jackson, Clay, Platte, Ray, Lafayette, Johnson, Henry, St. Clair, Cedar, Dade, Lawrence, Greene, Polk, Hickory, Benton, Pettis, Saline, Carroll, Howard, Cooper, Morgan, Camden, Miller, Cole, Moniteau, Boone and parts of Monroe, Audrain, Pike, Montgomery, Callaway, and St. Louis. This is but a fraction of the mineral-bearing lands of Missouri. The director of the United States survey has notified Professor Winslow that the government will co-operate with the State, and will put a full corps of surveyors in the field next spring, who will work in such localities as the State geologist may direct. Professor Walter P. Jenney has been assigned work in surveying the lead and zinc deposits. James D. Robertson of Washington University, St. Louis, has been appointed assistant to State geologist; Dr. Hambach of Washington University, St. Louis, assistant paleontologist for the State; Elston Lonsdale of Columbia, aid to paleontologist; Leo Gluck of Lamonte, aide and mining engineer. Professors Jenney and Robertson have been assigned work at Joplin, and they will perform co-operative work in regard to the lead and zinc deposits of that locality, and, when completed, extend eastward. Professor Lonsdale has been directed to collect material from the vicinity of Columbia. Leo Gluck has been assigned to the coal-fields. His first work will be in Pettis, Johnson, Lafayette, and Bates Counties. Professor Winslow will first take up the lead and zinc deposits, detail examination of coal-fields, study of building-stone, clays, and sands of the State respectively. The coal-fields of the South-west will receive attention prior to other localities, on account of their magnitude. An investigation of the lead and zinc fields will commence first at Joplin, and extend to Springfield, and from thence to Franklin County. Building-stone, clay, and sand will be examined from all parts of the State, and tests of the quality and durability made. Regarding the local reports from Ripley, Madison, and other South-east counties, of the discovery of gold and silver ore in paying quantities, Professor Winslow says that he has no official information regarding the same. He says that there is silver in South-east Missouri, but whether or not it can be found in paying quantities he is not able to say.

— James Prescott Joule, one of the discoverers of the mechanical equivalent of heat, died at his home in Sale, near Manchester, England, on the 11th of October, after many years of feeble health. Dr. Joule was born at Salford, Dec. 24, 1818. In his early days he studied chemistry under Dalton. In 1841 and 1842 he worked on the subject which made his name known among physicists, and in 1843, at the Cork meeting of the British Association, published the results in a paper entitled "The Calorific Effects of Magneto-Electricity, and on the Mechanical Value of Heat." For the experimental proof contained in this paper of a definite quantitative relation between heat and work, Dr. Joule was honored by the presentation of medals by the Royal Society, the English Society of Arts, and others. He was the author of a large number of papers, which have been published in collected form by the Physical Society.

— *Garden and Forest* states that President Horace Davis, of the University of California, recently received an inquiry from Algeria concerning experience on the Pacific coast with grasses for restraining drifting sands. As much of this kind of work has been done at Golden Gate Park, in San Francisco, the experience of Mr. John McLaren, the efficient superintendent of the park, was asked, and his statement has been forwarded to the distant applicant. Part of the information given by Mr. McLaren is quoted as follows in the *Pacific Rural Press*: "The grasses found most successful here are the Sea Bent grass (*Calamagrostis arenaria*) and the Bermuda grass (*Cynodon dactylon*), both of which have been entirely successful in holding the loose sand. I would plant the Sea Bent in the most exposed places, and the Bermuda on the protected slopes. We plant in rows one and one-half to two feet apart and one foot deep. Where practicable, the plough is used, dropping the roots in each alternate furrow. Where the dunes are too steep for ploughing, pits are dug with the spade, and, after planting, the sand is trodden firmly with the foot. The plantations have to be examined after heavy wind-storms to replant any roots exposed by the wind. If seeds only can be procured, I would suggest that they be sown in nursery rows, and the plants set out the following season." Of course, there are also many shrubs used, and the nursery at the park has propagated a vast number of the *Leptospermum* and other shrubs which have been found serviceable.

— It has always been the desire of engineers to obtain "black" prints from plans and drawings, in place of the present blue-prints. The discovery of a new substance by a French chemist, M. Pechard, announced in *Iron*, may make such a result possible. It is a mixed acid derived from oxalic and molybdic acids, and is therefore termed "oxalomolybdic acid." The crystals of oxalomolybdic acid, when dry, may be preserved unchanged, either in sunshine or in the dark; but if moist they quickly become colored blue when exposed to the sun's rays. If characters be written on paper with the solution, they remain invisible in a weak light; but, when exposed to sunshine, they rapidly become visible, turning to a deeper indigo-color. It is curious that this effect only happens when the solution is spread over paper or other surfaces; for the solution itself may be kept unaltered in the bottle for any length of time, except for a trace of blue at the edge of the meniscus, where by surface action a little is spread against the interior glass walls. If a sheet of paper be immersed in a saturated solution of the acid, dried in the dark, and then exposed behind an ordinary photographic negative, a very sharp print in blue may be obtained by exposure to sunlight for about ten minutes. The color instantly disappears in contact with water; so that, if a piece of this sensitized paper be wholly exposed to sunlight, one may write in white

upon the blue ground by using a pen dipped in water. If, however, the paper with its blue markings be exposed to a gentle heat for a few minutes, the blue changes to black, and the characters are then no longer destroyed by water.

— At the thirty-ninth meeting of the Institute of Electrical Engineers of this city, on Oct. 29, Mr. George B. Prescott, jun., read an interesting paper on some methods of regulating accumulator batteries in electric lighting. The paper was well illustrated by numerous diagrams.

— There was a preliminary meeting of the International Congress on Celestial Photography at Meudon, France, on Sept. 20, to consider the programme that had been drawn up by the provisional committee. A few slight alterations were made in the original scheme, as we learn from *Nature*, but the details of the work were not entered into. It was, however, decided that the greatest latitude should be allowed in the choice of instruments, and that each observer should employ that instrument to which he was accustomed, having no regard to uniformity. In order to indicate the spectroscopic work included in the programme, a change in the style of the congress was agreed to. It is henceforth to be the "International Congress on Celestial Photography and Spectroscopy."

— Mr. Hannay summarized his new white-lead process at the recent British Association meeting by stating that the lead ore as it comes from the mines is volatilized and oxidized by the air, the fumes are condensed in a slightly acid liquor, and the resulting sludge is washed and dried for the market without having been touched by the men. He does not employ women at all in his Glasgow works. The condensed material is extremely fine, firm, and of great covering power. The volatilization is effected in an ordinary lead-smelting furnace, but here the object is to get as much fume as possible. The advantages of this process are, that the white lead is made in a day instead of the three months of the Dutch process; that it starts with the ore, and not with the purified metal; that it is obtained in a fine powder instead of a hard crust, which has to be ground; and most important of all, as *Engineering* points out, that there is hardly any danger for the workmen. Some of these advantages, claimed specially as regards the purity of the product, were, however, questioned by Sir Lowthian Bell, although the process might develop.

— In the April bulletin of the Hatch Experiment Station of the Massachusetts Agricultural College at Amherst, report was made of the results of heating, during the months of January and February, two greenhouses built side by side, of the same size, one by means of steam, and the other by hot water; the conditions being the same as far as possible, except that the house heated by hot water was more exposed to the prevailing westerly winds than the other. The results were so marked, and so decidedly in favor of the hot-water system, that the report has provoked many inquiries and some criticism. In order to make their position more fully understood, and to answer some of the questions that have arisen, they make some further explanation of the conditions under which the tests were made, and report the results obtained for the months of March and April. With other boilers and with other conditions, different results may possibly be obtained; but they know of no recorded experiments where accurate observations have been made, most of the reports being based upon guess-work or casual observation. The boilers used consist of cast sections, arranged in such a manner over the grate as to form a return flue arrangement, the smoke passing off in the front. In the hot-water boiler five sections were used, the area of heating surface exposed to the fire being 74.5 feet. The steam boiler consists of eight sections, the aggregate area exposed to the fire being 61.12 feet below the water-line, and 24 feet above, making the total heating surface of the steam boiler 85.12 feet. Tables are published in the bulletin for October showing the comparative results of the use of the two boilers for the months of March and April, 1889. These tables show that the average temperature of the house heated by hot water was 2.3 degrees higher than that heated by steam, and that the amount of coal consumed was one ton 106 pounds less in the former than in the latter. The total coal consumed by the hot-water boiler from Dec. 23, 1888, to April 24, 1889, was four tons 1,155 pounds. The average daily temperature for the four months was 53.5°. The total coal consumed by steam boiler from Dec. 23, 1888, to April 24, 1889, was 5 tons 1,261 pounds. The average daily temperature for the four months was 51.2°.

— The strawberry crop in Massachusetts this season, as reported by Samuel J. Maynard of the Hatch Experiment Station, Amherst, Mass., has been much smaller than for the past ten years. The causes that have contributed to this failure are in part the cold, wet summer of 1888, which promoted a late growth, in which the fruit-buds were not matured sufficiently to withstand the winter; the long, open winter, in which the plants were not well protected, and the continued wet weather of the past spring, preventing perfect fertilization. Few, if any, of the new varieties have shown qualities which make them superior to those already in general cultivation. The tendency of the market has been to demand large berries at the expense of quality. Such berries can only be grown under the highest state of cultivation, which many growers have not yet learned is a necessity to the profitable growth of the strawberry.

— Mr. Clarence M. Weed, entomologist and botanist of the Ohio Agricultural Experiment Station, summarizes the results of a series of experiments on the prevention of injuries of the potato-rot as follows: (1) that a large proportion of the injury done by the potato-rot can be prevented by spraying the vines with the Bordeaux mixture; (2) that this treatment apparently diminishes the amount of scab affecting the tubers; (3) that by adding London-purple to the mixture the same treatment may be made effective in preventing the injuries both of the rot and Colorado potato-beetle.

— Extralite, a compund which belongs to the panclastite group of explosives, is very similar to roburite, securite, bellite, romite, etc., and, like them, depends for its action upon a non-explosive combustible agent which becomes explosive by the admixture of an oxidizing agent. It is a mixture of ammonium nitrate, potassium chlorate, and naphthalene, and in appearance resembles C sugar as far as color and consistency are concerned. It is claimed for it that it is safe to handle, not liable to spontaneous ignition or accidental explosion (such as may be caused by striking or concussion due to falling against hard surfaces, like iron or stone), not liable to freeze, not explosive in ignition by flame, and can only be exploded by percussion-caps and when within rigid enclosure. The latter quality has made its use practicable for shells and other projectiles, but it is chiefly for mining and blasting purposes that it is recommended. In some experiments performed with it on the line of excavation and blasting for the laying of water-pipes in Central Park, opposite West 97th Street, and described in *The Engineering and Mining Journal*, its claims were fully demonstrated. A fire was built of wood and paper saturated with kerosene, into which several cartridges were opened, but the preparation only burned away without any evidence of its explosive power. A percussion-cap and fuze were attached to an extralite cartridge, and the fuze lighted. The cap went off, but the cartridge remained intact. Equally futile were all efforts to explode it by pounding it on a rock. Finally three borings in the solid rock were loaded with it. One hole was eighteen inches deep, and eight ounces of the explosive were rammed into it. The others were twelve and eight inches respectively, and four ounces were put into them. The charges were connected and fired. The result was perfectly satisfactory, and demonstrated its special power as a rending agent. While dynamite has greater influence, by its very rapid action in pulverizing the surrounding rock, this explosive, although equally as powerful, by its more retarded action expends its force in shattering larger weights of rocks. It is claimed for this preparation that its use for blasting purposes in mines is of great value, owing to the fact that no noxious fumes are generated, and that the powder is almost smokeless. This statement has been disputed in England by those who have used roburite, although that explosive has received very high recommendations from certain quarters. It is interesting to note that extralite is the first of this class of explosives to be manufactured in the United States, and, owing to its general safety, it may prove a formidable rival to the various dynamites now on the market.