good conduct. Arrangements have accordingly been made, says the *Hospital Gazette*, to facilitate these unions; but physiologists and pathologists must feel sundry qualms as to the expediency of such a course. The physical and moral degradation of many of these social waifs is distinctly hereditary; and a careful moral training (which is not provided for) would, at the most, only modify the tendencies which have brought them within the clutches of the criminal law. The son of a poet is not of necessity a poet, but the offspring of a bawd or an assassin is extremely likely to develop the same proclivities. If even one of the parties to the transaction were worthy of respect, some regeneration might be hoped for; but the association of two hopelessly abandoned bodies and souls is not calculated to improve matters in any respect whatever.

A CENTENARIAN SURGEON. — The *Patria* of Buenos Ayres affirms that there is now in Bolivia a surgeon, Luca Silva by name, whose age is not less than one hundred and twenty-nine years. He was born in Cochabamba in 1760, and devoted himself, after graduating in medicine, to the practice of surgery. He rendered important service to his country, when, after the famous manifesto of June 16, 1809, she entered on her struggle for independence. His treatment of the wounded, particularly his operations on the field of battle, won him high distinction. He also earned signal honor in the combatant ranks. This parallels the case of Dr. Holyoke of Salem, Mass., who practised his profession for upward of eighty years, his visit-books being still extant showing the record from beginning to end.

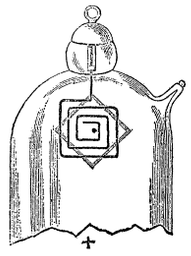
BACILLI ON A BALD HEAD. — Dr. Saymonne claims to have isolated a bacillus, called by him "bacillus crinivorax," which is the cause of alopecia. It is, he says, found only on the scalp of man, other hirsute parts of the body and also the fur of animals being free from it. The bacilli invade the hair-follicles, and make the hair very brittle, so that they break off to the skin. Then the roots themselves are attacked. If the microbes can be destroyed early in the disease, the vitality of the hairs may be preserved; but after the follicles are invaded, and all their structures injured, the baldness is incurable. The following is Dr. Saymonne's remedy to prevent baldness: Ten parts crude cod-liver oil, ten parts of the expressed juice of onions, and five parts of mucilage or the yolk of an egg, are thoroughly shaken together, and the mixture applied to the scalp, and well rubbed in, once a week. This, he asserts, will certainly bring back the hair if the roots are not already destroyed; but the application of the remedy, as *The Medical Record* well observes, must be very distressing to the patient's friends and neighbors.

ELECTRICAL NEWS.

ELECTRIC LIGHTING FROM PRIMARY BATTERIES. — The chromic chloride primary batteries of Commandant Renard seem to be enjoying some success abroad. Thirty-six cells of this battery are deemed sufficient to run a 300-candle-power arc-lamp, and it is claimed that a 900-candle-power arc-lamp can be run from 42 of these cells. The cost per candle-power hour is estimated to be about one-fifth of a penny. A number of primary batteries have been introduced in this country for the purpose of electric lighting, and much money has been spent in patenting and placing them upon the market. As far as we know, they have never realized an approach to commercial success.

ST. LOUIS ELECTRICAL EXPOSITION. — This exposition is being held at St. Louis, and is certainly a very attractive feature in that city just now. A number of prominent exhibiters are represented. Among the miscellaneous exhibits are those of the Writing Telegraph Company of New York, the Electric Date and Time Stamp Company of St. Louis, the Graphophone-Phonograph Company of New York, and the American Waltham Watch Company of Boston, Mass., to say nothing of other companies manufacturing miscellaneous devices. The parent electric manufacturing companies are well represented, both as to *personnel* and machinery. Besides apparatus of a strictly electrical character, one finds leather belting, steam-engines, feed-water heaters, water-wheels, wire, etc., which all are day by day assuming a closer relation to the electric-lighting industry. One of the most interesting exhibits is the electric welding apparatus shown by the Thomson Electric Welding Company of Boston. It is not generally known just how complete and satisfactory this process is, and the company are taking advantage of the splendid opportunity now offered them in St. Louis to show and do all varieties of welding-work in the exposition building. Another device that seems to be appreciated by ladies and practical-minded husbands is the electric heater of the Burton Electric Heater Company of Richmond, Va. This heater is in actual use, cooking beefsteak, eggs, etc.; the inventor taking this opportunity of showing just what electricity is destined to do in the way of culinary and general heating attainment. Almost every thing and every body electrical are represented, notwithstanding which fact the exposition cannot be said to equal that in Chicago on the occasion of the annual meeting of the National Electric Light Association last February.

VOLATILIZATION OF METALS. — A correspondent of the *Revue Internationale de l'Electricité* writes, "We have received from M. Gaston Seguy, who is not only a clever glass-blower, but also an intelligent observer, two samples of tubes in which the volatilization of metals in a vacuum by the passing of the electric current has given rise to some curious phenomena, which we are unable to explain satisfactorily. We therefore confine ourselves to submitting to our readers the result of these experiments, hoping that perhaps one of them will be able to indicate on what theory we can



base our facts. A glass tube three centimetres in diameter is closed at the two extremities, and to each end is soldered an electrode of platinum or copper of the form shown in the adjoining figure. Through a nipple on the side of the tube a vacuum equal to that of the Geissler tubes is produced by means of a mercury-pump; then the current of a powerful induction-coil (three-tenths of a metre spark at least) is passed through. The metal is then volatilized at the negative pole, and is deposited on the sides of the glass, producing a black discoloration for platinum, and yellow for copper. The metallization of the sides of the tube is more rapid in proportion as the diameter is smaller; but in any case it produces this curious phenomenon, to which we wish to call attention: it does not take place at all on either side on that part of the tube placed directly opposite the plane of the electrode, as we can easily see by placing the tube before a sheet of white paper. The reservation thus obtained exactly reproduces the external form of the electrode; but what is still more curious is, that the angles of this outline do not correspond to the angles of the electrode, but come opposite the straight lines, as shown in the accompanying figure. These are phenomena similar to those observed by Crookes, Jamin, and Goltein; and we think, that, in order to facilitate an explanation of them, it is better not to pass them by in silence, but, on the contrary, to note them with all their peculiarities every time we observe them."

NOTES AND NEWS.

ON Friday evening, Sept. 6, the Nevada Academy of Sciences held its first working meeting, upon which occasion Gen. C. W. Irish read a very interesting paper on "The Air-Currents of Western Nevada." The officers of this new scientific society are, president, Gen. C. W. Irish, surveyor-general of Nevada; vice-president, C. W. Friend, director Nevada State Weather Service; secretary, Professor R. D. Jackson, State University; treasurer, J. Rankin; executive committee, the president, secretary, and the following, — Dr. LeRoy D. Brown, State University; Professor W. McN. Miller, State University; and E. M. Van Harlengen.

— Dr. S. Weir Mitchell of Philadelphia has .been elected president of the Congress of American Physicians and Surgeons, which meets in Washington in September, 1891.

— Herbert Spencer, according to a London correspondent of the New York *Sun*, has returned to London with his autobiography completed up to the present time. It is not to be published until after his death, but he is making preparations for it to be produced then on both sides of the Atlantic simultaneously. The manuscript has been put into type, and three proofs only are taken, all of which are sent to him. Before the type is distributed, two moulds are taken for stereotyping, one of which is to be sent to America, where Spencer is more widely read than in England, to be used immediately upon his death.

— Professor L. H. Bailey, of the Agricultural Experiment Station of Cornell University, sent a large number of circulars to leading fruit-growers in New York and Michigan, asking for definite information in regard to windbreaks, and, as a general summary of the result, makes the following statements: — 1. A windbreak may exert great influence upon a fruit plantation. 2. The benefits derived from windbreaks are the following: protection from cold, lessening of evaporation from soil and plants, lessening of windfalls, lessening of liability to mechanical injury of trees, retention of snow and leaves, facilitating of labor, protection of blossoms from severe winds, enabling trees to grow more erect, lessening of injury from the drying-up of small-fruits, retention of sand in certain localities, hastening of maturity of fruits in some cases, encouragement of birds, ornamentation. 3. The injuries sustained from windbreaks are as follows: preventing the free circulation of warm winds and consequent exposure to cold, injuries from insects and fungous diseases, injuries from the encroachment of the windbreak itself, increased liability to late spring frosts in rare cases: (*a*) The injury from cold, still air is usually confined to those localities which are directly influenced by large bodies of water, and which are protected by forest belts (it can be avoided by planting thin belts); (*b*) The injury from insects can be averted by spraying with arsenical poisons; (*c*) The injury from the encroachment of the windbreak may be averted, in part at least, by good cultivation and by planting the fruit simultaneously with the belt. 4. Windbreaks are advantageous wherever fruit plantations are exposed to strong winds. 5. In interior places, dense or broad belts, of two or more rows of trees, are desirable; while, within the influence of large bodies of water, thin or narrow belts, comprising but a row or two, are usually preferable. 6. The best trees for windbreaks in the North-eastern States are Norway spruce, and Austrian and Scotch pines, among the evergreens. Among deciduous trees, most of the rapidly growing native species are useful. A mixed plantation, with the hardiest and most vigorous deciduous trees on the windward, is probably the ideal artificial shelter belt.

— By permission of the trustees of the Lowell Institute, Boston, the curator, Professor Alpheus Hyatt, is enabled to distribute a limited number of tickets to teachers of private schools and members of the Boston Society of Natural History who desire to attend the course of lectures described below. Applications for tickets should be made immediately at the library in the society's building. Professor W. O. Crosby will give a course of ten lessons during the winter of 1889–90, upon the physical history of the Boston Basin. The course of lessons on the geology of Boston and vicinity given last winter was devoted to a general and systematic study of the geological phenomena of the Boston Basin, in which the various principles of dynamical and structural geology were taken up in the order of the text-book, and studied in connection with those localities in which they could be most satisfactorily illustrated, each class of phenomena being referred only to that part of the basin in which it had its finest development. This comprehensive course in geology may therefore be regarded as having formed a suitable preparation for the lessons to be given during the coming winter. The principal object of this second series of lessons will be to apply the principles of the first series to a thorough and detailed study of the physical history of the Boston Basin. Each important locality or natural division of the Boston Basin will form the subject of a separate lesson, in which its structural features, and, so far as they can be made out, the more important events of its history, will be presented as fully as the time will permit. Special attention will be given to tracing the relations of the existing surface feature of each district to its geological structure, and thus connecting the physical geography and geology of the region. The concluding lessons will summarize the results of these detailed studies; and an attempt will be made to present a picture of the Boston Basin at each principal epoch of its history. The course will be freely illustrated by specimens, maps, and diagrams, and also by a relief map or model of the Boston Basin, which will be colored to represent geological features. The lessons will be given, as usual, in Huntington Hall, in the Massachusetts Institute of Technology, beginning Oct. 12. Doors will be closed at 3 P.M.

— A tramcar line is being constructed in the Argentine Republic which will connect Buenos Ayres with the outlying towns, and will, when finished, extend over two hundred miles. The cars will be drawn by horses, which are cheap and plentiful in South America; while fuel, both wood and coal, is scarce and expensive. The rolling-stock consists of five sleeping-cars eighteen feet long, each with six beds, which in the day-time are rolled back to form seats; four two-storied carriages; twenty platform-carriages; six ice-wagons; four cattle-trucks; and two hundred goods vans.

— Professor J. B. Smith, entomologist of the New Jersey Experiment Station, in a recent bulletin, tells the farmers and gardeners of the State how they can help him in his investigation of insect-pests. His first counsel is to be prompt, instead of waiting till the damage is done and the pests have disappeared; and he adds, "Do not waste time in describing insects. Send specimens, and send plenty of them. If an insect is really injurious, it is as easy to get a dozen as it is to get one, and it makes it a great deal easier for the entomologist. He wants two or three to put in alcohol, so that he will know them next time; the others he wants to bring to maturity, or to describe or figure so as to complete his knowledge of them. Such specimens, if dead, should be packed in some soft material, as cotton or wool, and put into a stout tin or wooden box. They go by mail for one cent per ounce. Never send insects loose in a letter. The postal-clerk always smashes them flat, so that they are never of any use as specimens, and frequently not recognizable. With the specimen send also, so far as possible, a sample of the kind of injury caused by it, — a bored twig or root, or gnawed stem, fruit, or leaf, — any thing to show how the insect works. If at all possible, send the insects alive, along with a supply of their ordinary food sufficient to last during the journey. Pack them in a tight box, and do not punch air-holes in it. Insects need very little air, and the tight box keeps the food moist. Send with the insect an account of what you know of it, — how it works, whether on leaves, twigs, or fruit, whether above ground or under ground; how long you have known it; how much damage it has done; what experiments looking to its destruction have been made, and what the result has been. Such facts are often not only of the highest scientific interest, but also of the greatest practical importance."

— Among other reports received by the United States Hydrographic Office, we would call attention to two, — one from Capt. James P. White, of the American schooner "Ada Bailey," who reports that he used oil with wonderful effect in the late storm, and did not ship any water after he got his oil-bag over the side of the vessel. He always uses a cone-shaped bag stuffed half full of oakum, and prefers kerosene to any other oil. He says that he has been using it for five or six years, and believes that it is better than a thicker oil, although he has mixed fish-oil with kerosene, obtaining good results. It is his custom to keep a supply of oil always on hand for this purpose, and he uses from one to three barrels of oil every long cruise. The other was from Capt. McCrae, of the British schooner "Atwood," dated Sept. 9, in which he stated that when about 45 miles south of Sandy Hook, wind north-east, and a tremendous sea running, the jibs were washed away from off the bowsprit and jibboom, and bowsprit and mainmast sprung. Tremendous seas coming aboard smashed down the after-companion-way, bent the stern boat-davits, carried away the boat, and broke the rails. He used paint-oil mixed with kerosene and grease in canvas bags, hung from forward aft on the weather side, keeping them replenished every six hours. The oil proved a great benefit,

as the seas broke over no more; and the captain is of the opinion that the vessel was saved from further damage. During the 9th the vessel was hove to to a drag.

— The Natural Science Association of Staten Island was organized Nov. 12, 1881, with a membership of fourteen, and during the first two years of its existence no records were published. It was thought better to first ascertain, by actual experience, whether the association was reasonably sure of becoming a permanent institution. At the end of this period the steady growth which it showed both in membership and contributions, and the encouraging recognition which was received from all directions, seemed to justify the experiment. Accordingly the publication of the "Proceedings" was begun. These have since been issued, without interruption up to the present time, partly in the form of records of the regular meetings of the association, and partly as "extras" or "specials," which latter were published at such times as were found to be most convenient. It was decided at the beginning to print only such material as was of strictly local interest, in the firm conviction that the chief value of the "Proceedings" would be to serve as authentic records of facts in regard to the natural history and antiquities of the island. If such records had been kept during the past fifty years, many items of value and interest would have been preserved, which are now either lost entirely or else amount to mere uncertain tradition. Even within the past five years the rapid growth of the community has obliterated many of the most interesting natural objects, and these "Proceedings" are now the only definite records that they ever existed, and contain the only published authentic facts in connection with them.

— A congress composed of planters, exporters, and persons interested in the sugar-production of Java, has been held at Samarang. The object of this congress was mainly to discuss the cause and cure of the nematode attacks on the cane-roots, there called the "sereh" disease, which is now spreading most rapidly and disastrously through the cane-fields of western and central Java, having been first discovered on the island only three years ago in plantations near Cheribon, a seaport town on the north coast 125 miles to the eastward from Batavia. The congress subscribed a fund of $90,000 for the purpose of engaging a bacteriologist from Europe to visit the island, investigate the disease, and propose its remedy. The nematodes reduce not only the quantity of the sugar-crop, but its quality as well, and the subject is therefore of the utmost importance in cane-growing regions.

— The second report of the Chinese prize-essay scheme, in connection with the Chinese Polytechnic Institution and Reading-Rooms, Shanghai, has been printed, and the following particulars are extracted from it: Since the last report, which was published in 1887, the scheme has been steadily worked, and has now expanded into far more extensive proportions. By its means the existence of the Polytechnic Institution has become known far and wide, the co-operation of some of the highest officials in the empire secured, and an interest in Western ideas has been created in some of the most influential quarters. By the annual expenditure of only a hundred taels or thereabouts, and by working in harmony with the Chinese methods of thought, and time-honored systems of literary competition, a result has been obtained which the use of large sums of money in other ways would have failed to produce. The various other officials who have taken part in this undertaking have generally shown a wonderful insight into the needs of China at the present time; and although their questions relate, perhaps, more to political economy and commerce than to the severer branches of science, it is still gratifying to see how patriotic they are, and how they regard knowledge from the practical, utilitarian point of view rather than from the theoretical alone. The following questions are taken from the list of subjects given by the various high officials: Write a discourse on the naval defences of China. What ought China at the present time to regard as of the foremost importance in her endeavors to improve in wealth and power? What advantages and disadvantages would China realize by the establishment of railways? Compare the sciences of China and the West, showing their points of difference and similarity. How can the evils attending the introduction of telegraphs and steamboats in China be removed, and the benefits be rendered permanent? What is the cause of the present unprofitable state of the trade in tea and silk, and how can the difficulties be remedied? The calamities of inundations and droughts, how can they be provided against in ordinary times; and when they happen, how can they be remedied or ameliorated?

— The annual meeting of the American Forestry Congress will begin in Philadelphia Oct. 15, and continue four days. The sessions are to be held in Horticultural Hall, Broad Street, and Gov. James A. Beaver will preside. A number of interesting papers upon forestry and kindred subjects have been prepared, while, through the liberality of citizens and organizations, courtesies have been promised to those attending the congress which will make the meeting most enjoyable.

— Recent advices from one of the California agents of the United States Entomological Bureau, Mr. D. W. Coquillett, show that the published statements in the California newspapers of late date, to the effect that the plum curculio has made its appearance in Los Angeles County, are entirely unfounded. Fuller's rose-beetle (*Aramigus fulleri*) has been mistaken for *Conotrachelus nenuphar*. The rose-beetle has been found to be very destructive in that vicinity to the leaves of evergreen oaks, camellias, palms (*Washingtonia fillifera*), *Canna indica*, and several other plants.

— At Marseilles, Bordeaux, and Poitiers public exhibitions of hypnotism have been forbidden. The Paris correspondent of the *British Medical Journal* writes, "The Departmental Council of Public Health advised the rector of the Academy to take this step in the districts under his authority, and he wisely followed the good advice. In Belgium, Geneva, and Mecklenburg-Schwerin they are likewise forbidden. In Paris, unfortunately, unwise doctors can show off their patients, and quacks follow in their steps with unwholesome imitations."

— Dr. George M. Sternberg, surgeon in the United States Army, has just returned from a six-months' stay in Cuba, where he has been continuing his researches with reference to yellow-fever. He has brought with him specimens of microbes, with which he will continue his investigations during the winter at the Johns Hopkins University. At the end of this time he hopes to present a general report of his investigations to President Harrison. "My researches," says Dr. Sternberg, "have not led to a positive demonstration of the specific cause of the disease; but I have isolated a considerable number of pathogenic bacilli, disease-producing germs, from the intestines of yellow-fever cases, and have strong hopes that one or more of these may prove to be the specific germ. I have confirmed my previous conclusions as to the absence of a specific micro-organism in the blood and tissues of the patients, and have failed to find in any of my cases the germ which Dr. Frere of Brazil has claimed to be the cause of the disease. For this reason I have given my attention entirely to the bacilli of the alimentary canal."

— "The American Electrical Directory" for 1889, published by the Star Iron Tower Company of Fort Wayne, Ind., possesses many features of interest and value to electricians and to all persons interested in electrical matters. In its thousand pages it gives a report of the proceedings of the National Electric-Light Association meetings in New York and Chicago, 1888 and 1889; lists of the isolated arc and incandescent plants in the United States and Canada; the Philadelphia schedule for public lighting; a carefully compiled list of the prices charged for gas in cities and towns having a population of over ten thousand; and reports of the various electric light and power companies in the United States, Canada, and Mexico. There are also lists of electric-light and railroad companies and their officers, of electric manufacturing, construction, and supply companies; rules of the New England Insurance Company, and of the New York Board of Fire Underwriters and Board of Electrical Control; and many tables and formulas of use to electricians.

— Harold Roorbach will issue shortly a handy volume for the aspiring dramatist in "The Art of Play-Writing." Written by a well-known playwright, it treats on every class of dramatic composition, and gives withal some hardheaded advice.