cited would be read with profit and encouragement by teachers far and wide. In view of the interest thus awakened, it was suggested that a day be set apart in the meeting a year hence for the discussion of science in the schools. During the session, Professors Leidy and Lesley were added to the list of honorary members, Professors Baird, Dana, and Gray having been previously elected to this class.

NOTES AND NEWS.

THE lectures delivered by Prof. Rodolfo Lanciani, LL.D., government director of archeological researches at Rome, before the Lowell institute, Boston, are full of interesting and instructive matter. The lecturer, after describing the humble origin of Rome, and the simple matter-of-fact causes which led to its foundation on the Palatine Hill, considered the sanitary conditions of the district which surrounded the new town. During prehistoric times the whole region was volcanic and free from malaria, and when it ceased to be volcanic, then malaria began. The clearest proof of the virulence of malaria in Rome in the first century is afforded by the number of altars and shrines dedicated to the goddess of the fever. At the time of Varro there were not less than three temples of the fever left standing. The principal works of improvement successfully completed in ancient times for the benefit of public health and for checking malaria were: I. The construction of drains; II. The construction of aqueducts; III. The multiplication and paving of roads; IV. The right organization of public cemeteries; V. The drainage and cultivation of the Campagna; VI. The organization of medical help. Professor Lanciani developed fully these points; and we regret, that, owing to want of space, we cannot follow him more minutely. The lectures are unique, and worthy reproduction in a permanent form.

— Physicians will doubtless remember the case of the late Dr. Groux of Brooklyn, who had the power of stopping the action of the heart at pleasure. Dr. Lydston of Chicago, in a note to the *American practitioner and news*, claims to have the same power, and to have demonstrated it to members of the medical profession.

— At a recent meeting of the Society of arts, Capt. Douglas Galton, chairman of the council, delivered an address which was a retrospect of the progress made in sanitation by the English nation during the reign of Queen Victoria. The registration of births, marriages, and deaths came into operation in 1837, ten days after the queen's accession to the throne. The sanitary condition of the country was wretched at this time. One-tenth of the population of Manchester, and one-seventh of that of Liverpool, lived in cellars. In 1845 a chapel in the immediate neighborhood of Lincoln's-Inn Fields was used as a schoolroom in the day-time, and a dancing-saloon at night. In the cellars underneath this chapel ten thousand bodies had been buried in the seventeen years ending 1840, the burials were still continuing, and the old coffins were removed through a contiguous sewer to make room for new ones. In the rural districts the same neglect of the public health was also prevalent. The various acts which have been passed during these fifty years have contributed greatly to the welfare and prosperity of England as a nation. In the decade 1850–60 the annual average saving of lives in England and Wales from sanitary improvement was 7,789; 1860–70, it rose to 10,481; 1870–80, it was 48,443; and in the five years 1880–84, the average annual number of lives saved by sanitary improvements has been 102,240.

— Mr. E. D. Preston of the U. S. coast and geodetic survey left last week for the Sandwich Islands on an important mission for that government. The object of his visit is the determination of astronomical latitudes on these islands, fifteen stations having already been decided upon. The pendulum will be swung at a great elevation, and also at the sea-level, to determine the downward attraction of some of the principal mountains. The latitude stations will be on the following islands: Kauai, Oahu, Molokai, Maui, and Hawaii. The work will probably show great deflections of the plumb-line on all the islands, and the pendulum work will no doubt confirm previous experiments on island stations; viz., that islands give an excess of gravity. The observations will occupy about four or five months. A copy of all observations will be deposited in the coast and geodetic survey archives. The work is done entirely at the expense of the Hawaiian government, the coast survey loaning the necessary instruments.

— Congressman Hatch, chairman of the house committee on agriculture, has received from Commissioner Colman of the agricultural department a reply to the resolution offered by Mr. Swinburne of New York regarding the cause and extent of pleuro-pneumonia in cattle. The commissioner sets forth the difficulties met in the attempt to extirpate or control this disease in the present state of the law, and with the machinery at hand, and re-enforces his recommendations previously made for more heroic methods. The commissioner again recommends as the only measure

which will extirpate the plague, and prevent both the direct and indirect losses, that, wherever an infected herd is discovered, all exposed animals should be slaughtered, the premises thoroughly disinfected, and the owner compensated for the loss to which he is subjected for the protection of the public. He urges upon congress the necessity of legislation giving to the departments power to carry out the measures required for extirpating pleuro-pneumonia untrammelled by state laws or state authorities, and it is expected to promptly suppress this disease.

— W. Stainton Moses, lately a vice-president and a member of the council of the English society for psychical research, has withdrawn from the society. In his letter of resignation, Mr. Moses says, "I have concluded, that, as a representative spiritualist, I could not do otherwise. considering, as I do, that the evidence for phenomena of the genuine character of which I and many others have satisfied ourselves beyond doubt, is not being properly entertained or fairly treated by the Society for psychical research."

— Professor Rohé of Baltimore, in a paper read at the last meeting of the American medical association, recommended that instruction in cookery be made a part of the curriculum of the public schools, and that mental philosophy or trigonometry should be dropped in order to make a place for it. In a number of schools and seminaries throughout the country the art of cooking is taught. In Lasell seminary at Auburndale, Mass., it has been taught since 1877. The Boston cooking-school was started in the same year. Similar schools are in operation in Raleigh, N.C.; Staunton, Va., and Washington, D.C. In London practical lessons in cookery are given in the girls' common schools. In Boston, Mr. Hemmenway of that city has succeeded in persuading the members of the school board to make instruction in cookery a part of the regular system of instruction.

— Mr. J. W. Walker has discovered on the south side of Pine Mountain, Georgia, nearly two hundred feet above the famous corundum-mine, a site where the ancient inhabitants of that region manufactured their talc vessels for cooking. Evidences of the use of stone implements in the work are indubitable. The vessels were blocked out and hollowed before being broken from the ledge. Many of the remaining fragments are honeycombed by exposure for a long time. Archeologists are familiar with similar phenomena elsewhere. Dr. Rau of the Smithsonian institution mentions several sites in the District of Columbia, and Paul Schumacher gives an elaborate account of the working of such quarries in southern California (Wheeler's *Report on U. S. geog. surv. west of 100th merid.*, vii. 117–121). Dr. Abbott's paper in the same volume (pp. 93–116) should also be consulted.

— On Nov. 10, 1886, a meeting of intercolonial delegates was held at the Royal society's rooms, Sydney, for the purpose of forming an Australasian association for the advancement of science. The following delegates were present: —Victoria: Field naturalists' club of Victoria, the Rev. Dr. Woolls; Geological society of Australasia, and Historical society of Australasia, Mr. R. T. Litton; Royal society of Victoria, Mr. K. L. Murray; Victorian institute of surveyors, Messrs. W. J. Conder and W. H. Nash; Victorian engineering association, Professor Kernot and Mr. K. L. Murray. Queensland: Geographical society of Australasia, Queensland branch, Mr. J. P. Thompson; Royal society of Queensland, Mr. Henry Tryon. Tasmania: Mr. James Barnard. New Zealand: Philosophical institute of Canterbury, Mr. S. Herbert Cox. New South Wales: Linnean society of New South Wales, Professor Stephen; Royal society of New South Wales, Mr. H. C. Russell, Professor Liversidge, Mr. C. S. Wilkinson; New South Wales zoölogical society, Dr. A. T. Holroyd; Sydney branch of the Geographical society of Australasia, Sir Edward Strickland. In the absence of Mr. C. Rolleston, president of the Royal society, Mr. Russell was voted to the chair. The first election of officers will be held in Sydney in March, 1888, and the first meeting of the association in the first week in September, 1888. Professor Liversidge was appointed convener for the next meeting, and a hearty vote of thanks was accorded to that gentleman for the part he had taken towards the formation of the new association, general satisfaction being manifested at the successful result of the meeting.

— Mrs. Thomas Say, the widow of the well-known naturalist who has been dead over fifty years, died at Lexington, Mass., on Nov. 15 last.

— Our Vienna correspondent writes us, "I was recently present at the trials made with a new pistol invented by Mr. Marcus, a distinguished mechanical engineer. In this invention the use of a cartridge is dispensed with, the bullet itself being prepared with an explosive. But, in spite of this explosive nature of the bullet, its shape is not altered by the explosion. The explosion is initiated by a simple mechanism provided in the interior of the pistol. The experiments were made with a single-barrel pistolet (the barrel being four centimetres long, and its caliber six millimetres). At a range of thirty paces a three-quarter-inch thick wooden board was pierced by

the bullet. Then a pistol with a simple-acting magazine, containing twelve bullets, was tried, allowing to give off forty shots per minute."

— Baltimore is about to build a crematory modelled after that of Buffalo.

— From the *Medical and surgical reporter* we learn, that, among the recruits recognized as unfit for military service in Switzerland in 1885, were 66 per cent of the tobacco-workers, 67 per cent of the basket-makers, 60 per cent of the tailors, 25 per cent of the butchers, and 25 per cent of the stonemasons and carpenters. Of 6,154 recruits in canton Berne, 1,833 were refused; of these, 581 suffered from goitre, and 162 from flat-foot.

— The Abbé Laflamme, of the University Laval, Quebec, has presented a note to the Royal society of Canada ('Memoirs,' 1886) on the contact of the paleozoic and archean formations in his province. Numerous exposures were examined, and in nearly all of them the Trenton limestone was found resting immediately on the clean, firm, rather smooth surface of the gneiss, without transitional deposits. Fragments of the crystalline rocks in the stratified are seldom found. The limestone beds follow the irregularities of their foundation, mantling over the mounds, and descending into the hollows. At certain points a sandstone lies on the crystallines: this is regarded as a time-equivalent of the Trenton, owing its composition to local geographic control not felt elsewhere. The change from the Trenton limestone to the overlying Utica slates is described as abrupt, without traces of gradual transition.

— The Franklin institute of Philadelphia has recently determined to attempt the formation of a state weather-service for Pennsylvania on the plan generally pursued by these organizations. The offer of the chief signal officer to furnish a member of the signal corps to assist in the work is accepted, and the legislature is to be petitioned for an appropriation of three thousand dollars for instruments and publications. The chairman of the committee in charge of the matter is Mr. W. P. Tatham, who should be addressed, in care of the Franklin institute, Philadelphia, by volunteer observers in Pennsylvania qualified for the work proposed.

— An account of the hurricane of March 3 and 4, 1886, over the Fiji Islands, was read at a recent meeting of the Royal meteorological society in London, by Mr. R. L. Holmes. This storm was the most destructive that has ever been known to occur in the Fiji group. The lowest barometer reading was 27.54 inches at Vuna, in Taviuni. The storm was accompanied by a great wave from 18 to 30 feet in height, which swept over the land, and caused an immense amount of damage. It was reported that 50 vessels were wrecked, and 64 lives lost, during this hurricane.

— The state board of health of Pennsylvania has issued its first annual report. It includes reports on the pollution of the Schuylkill River, the sanitary condition of Harrisburg, a detailed account of the typhoid-fever epidemic at Plymouth. In this famous epidemic there were 1,153 cases of sickness, with 114 deaths, and an expense of $97,120.25. A description of the disinfection apparatus employed at the municipal hospital of Philadelphia is also given.

— The ninth biennial report of the state board of health of California has just been issued. For the year ending June 30, 1885, there were 8,238 deaths recorded in the state: 1,227 deaths occurred from consumption. The rate from this cause is but little less than that of Massachusetts.

— The state board of health of Massachusetts has issued a manual containing the statutes of that state relating to the public health, and the decisions of the supreme court relating to the same.

— A wood-turner of San Francisco died ten days after receiving an injury to the brain which was not discovered until several days afterward. While at work at his trade, a steel chisel became detached from a grooving-machine, and struck him in the head, producing a fracture of the bones of the nose, and severely injuring the left eye, so seriously as to destroy that organ and necessitate its removal. After the removal of the eye, the surgeons found behind it a piece of steel three and a half inches long, one inch wide at the centre, and tapering to sharp points at the ends. One end was buried one inch and a half in the brain. The velocity and force with which this chisel must have entered the brain may be imagined when it is stated that the drum to which it was attached was making twenty-three hundred revolutions a minute.

— A correspondent of the *Medical press* writes from Berlin that the toxic qualities of the cholera bacillus have been investigated by Professor Cantani of Naples. He claims that the poison may be due to ptomaines, to the secretions of the bacilli, or to the bacilli themselves. Experiments made on dogs lead him to incline toward the last theory. Pure cholera cultures in beef-tea sterilized by heating to 100° C., injected into the dog's peritoneum, produced all the symptoms of cholera-poisoning; while pure beef-tea, injected in the

same manner, left the animals in perfect health. This certainly would demonstrate toxic qualities for the dead bacilli when absorbed by the living body.

— Dr. McEachran, live-stock inspector for Canada, is opposed to the inoculation of cattle for the prevention of pleuro-pneumonia. He believes, that, in every country in the world where it has been impartially tried and reported on, the report has been unfavorable. He regards it as a dangerous operation, and not warranted by any known benefits. Many die from the operation itself, and wherever it is practised it has to be kept up. Thus in Scotland, where inoculation is practised, there is a constant supply of the virus; and the cities of Glasgow and Edinburgh are active centres of the disease.

— The recently held meeting of the French congress of surgeons was a very notable one. M. Ollier of Lyons, well known for his experiments in bone-grafting, presided at the meeting, which was attended by many of the most eminent surgeons of France, as well as by other men of note, among whom were the president of the senate and the rector of the university. The most interesting discussion was that in regard to tetanus, or, as it is commonly called, lockjaw. It was opened by M. Vaslin of Angers. He regards it as a purely nervous disease, and, in support of his views, narrated a case which had come under his own observation, in which the disease was due solely to emotional causes, and which was cured by chloral and morphine. Professor Balestreri of Genoa concurred with M. Vaslin, and related several cases which he had treated, and which were successful. Professor Thirier of Brussels, on the other hand, believed tetanus to be contagious and of a parasitic nature. M. Mannoury of Chartres denied its contagiousness, and said, that, after conferring with a good many veterinarians, he was unable to learn of a single case in which the disease was communicated from one animal to another. Professor Verneuil of Paris is a firm believer in the contagiousness of tetanus, and thinks that it can be contracted by man from the horse. He said that human beings are often attacked with tetanus when living with or near animals affected with the disease, and that it often follows horse-bites. Wounds which have in any way come in contact with earth or straw soiled by horses are more liable to be accompanied by tetanus than others; and the disease is most frequent among stable-boys, horse-dealers, and, in general, those whose duties bring them in contact with horses. Notwithstanding all these arguments, it was generally admitted that all attempts to convey the disease experimentally from an affected animal to a healthy one had failed. M. Blanc of Bombay thought the disease to be contagious, and communicated sometimes through infected water. Interesting papers were read on bone-grafting, and the uniting of divided nerves by suturing. The author of the latter paper believed that severed nerves may be made to unite in a few hours.

— The sermons and autobiography of Mark Pattison, late master of Lincoln college, Oxford, excited such general interest, that arrangements are making to publish a volume of selections from Mr. Pattison's miscellaneous writings.

LETTERS TO THE EDITOR.

***Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Polarization of resistance coils.

IN August last Professor Mendenhall, in conversation with the writer, alluded to his observation of the polarization of certain resistance coils, and suggested an examination of the coils in this laboratory. The examination was made, and the results stated in remarks upon Professor Mendenhall's paper at the Buffalo meeting of the American association. A brief account may not be without interest and value.

The idea entertained by Professor Mendenhall at the time seemed to be that the polarization was of a 'statical' nature; the deflection obtained on connecting the coil, through which a current had been passed, with a galvanometer, being produced by the 'residual charge.' The examination of our coils was undertaken with the same idea, the 'condenser discharge' method being made use of, substituting the coil under trial for the condenser. The galvanometer was a 6,000 ohm astatic Thomson, by Elliott Brothers, its needle making a vibration in about ten seconds. A Fuller cell and Sabine discharge key were used. Polarization was found in every coil in the laboratory, except in a standard B.A. unit from Elliott Brothers. It was also found in a Hartmann box loaned for examination by Messrs. Queen & Co. The effect was found to vary widely in different coils in the same box, particularly so in a box of 100,000 units from Elliott's, whose 40,000 coil gave 40 degrees deflection against 6 or 7 degrees for any other coil in the box. On opening the box, it was found that the 40,000 coil had been heated till the paraffine had melted and some of it had run off, while the other coils were well covered, as usual in Elliott coils. The Hartmann box, whose coils were not paraffined, showed the effect more strongly than any except the 40,000 Elliott. It was observed that the coil terminal connected to the positive pole of the battery in charging, was itself positive in discharging; that reversing the battery reversed the discharge deflection; that the deflection was not momentary, as with condensers, but that it indicated a steady current, diminishing slowly, but not ceasing in some instances after eight or ten hours; that when the coil was charged by battery for several minutes, and then the current reversed and allowed to flow a few minutes longer, the discharge current was at first due to the last charging current, but after a time it ceased, and was followed by another