bestowed on their bodies, survivals of which belief linger on at the present day. According to Mr. Hunt, in his "Romances of the West of England," fishermen dread to walk at night near those parts of the shore where wrecks have taken place. It is affirmed that the spirits of the drowned sailors haunt such localities, and many a fisherman has declared that he has heard the voices of dead sailors "hailing their own names." This idea is not confined to this country, but is found in various parts of the world.

## THE HABIT OF WASHING.

No practice, no custom, however long established, has ever been allowed a permanent right to respect, or even to existence. Sooner or later its turn will come to be weighed in the critic's balance, and its quality will have to be proved. Let us quote, as a recent illustration, the habit of daily bathing, the utility of which has, of late, though not for the first time, been seriously questioned. The reasonableness of doubt in such a matter, and under ordinary circumstances, does not, we confess, says *Lancet*, commend itself to our judgment. Whether the opponents of ablution fear the shock of cold immersion, or whether they dread the cleansing stimulation thus applied to the excreting skin surface, their objection must appear to most persons possessed of ordinary health and vigor to threaten impairment of both by fostering uncleanliness. If, on the other hand, it is too free application of heat by Turkish and other warm baths which appears objectionable, we will not deny that there is here a possible ground for complaint. Let it not be supposed that we ignore the curative influence or the cleansing property of this method when used with judgment. It has undoubtedly its fitting time and places if rightly applied. It is no less true, however, that experience has often proved the mischievous effects of its misuse — in case, for example, of cardiac weakness or general exhaustion. Cold bathing in like manner is not without its occasional risks. It is not suitable for persons enfeebled from any organic cause, though mere nervous languor is often braced and benefited by it. It has no proper place among the habits of those who are subject to chronic visceral congestions. As regards one advantage derived from bathing, i.e., its cleansing property, there is no reasonable ground for difference of opinion. Man, whether savage or civilized, appears, as a rule, to have no doubt on the subject. Wherever we find him with water accessible he is a bather. Less practiced by one people than another though it may be, there still is commonly recognizable a constant habit of ablution, and this fact in itself attests at least an almost universal belief in the necessity of ensuring cleanliness by means of washing. Nor can we find reason to doubt the general soundness of this belief. In bathing, temperature is, of course, a chief consideration. For the robust, cold immersion followed by rapid friction is a valuable tonic of nerve, skin, and heart function. For less vigorous constitutions — those, for example, which have been tried by disease, and those of young children — the addition of heat up to the temperate point is only judicious. With some persons a warm bath is a daily luxury. Notwithstanding its efficacy as a means of cleanliness, however, this custom is, or ought to be, discredited by its inevitable action as a nervous depressant, which places it in an unfavorable position compared with the more bracing practice of cold effusion. The benefit derived from bathing, therefore, is likely to assert itself in spite of all adverse criticism, and its mismanagement, which is only too common, should not be suffered to condemn it in the eyes of any judicious and cleanly person.

## NOTES AND NEWS.

IN an Austrian periodical, says the *Lancet*, a regimental surgeon named Thurnwald makes an interesting comparison between the wounds caused by the new small calibre bullets and those caused by less recent forms of projectiles. His verdict is favorable. The soft parts are less bruised, and the bones less shattered. At fighting distances the bullets hardly ever remain in the body, and the wounds are smooth, clean, and of small diameter — conditions giving fair chances of recovery.

— At the end of 1890 a census was taken of the population of the Austrian capital, which showed (*British Medical Journal*, Aug. 29, 1891) that it contained 1,380,917 inhabitants, being an increase of rather more than 23 per cent as compared with the enumeration made ten years before. The proportion of the sexes was 51 63 per cent of females to 48.37 per cent of males The number of persons suffering from mental or physical infirmity was 3,964, of whom 983, or 24 7 per cent, were blind; 980, or 24.7 per cent, were deaf and dumb; 1,627, or 41.04 per cent, were idiots or insane; and 374, or 9.44 per cent were cretins. Of the whole number, 53.13 per cent were males, and 46 87 per cent were females. The excess of males as compared with females, however, holds good only as regards cases of deaf-mutism, insanity, and idiocy; the cases of blindness are equally distributed between the sexes, and as regards cretinism, the fair sex leads easily, the respective percentages being 39 3 males to 60.7 females. On comparing these figures with those of the census of 1880, it will be seen that while blindness has diminished by nearly 10 per cent, and deaf-mutism has remained stationary, insanity and cretinism have increased by 32 per cent. This increase is greater in the female sex than in the male, in the proportion of 43.02 to 23.2 per cent. Of the 983 blind persons, only 21, or 6 per cent, were born blind; the causes of the condition are said to have been blennorrhea neonatorum (in 14 cases), small-pox (in 11), other affections (in 295), and injury (in 17). Of 381 deaf-mutes not inmates of public institutions, 127, or 33.3 per cent, became deaf and dumb after birth. Of the cretins, 63.4 per cent are between ten and thirty years of age, and 31 per cent can do ordinary household work.

— At a recent meeting of the Asiatic Society of Japan in Tokio, a paper full of curious and interesting information of the condition of the blind in Japan was read by Professor Dixon. In early ages the blind were regarded as unlucky or uncanny, and their condition was one of great misery, until one of the imperial princes was born in this state. His father collected around him a number of blind to amuse him, and when, on attaining maturity, he was appointed governor of three provinces, he took with him blind men to assist him, and for about three centuries the administration of these provinces was always in the hands of the blind. This prince also introduced the practice, which prevails at the present day, of the blind shaving their heads. During the civil contests of the twelfth and thirteenth centuries between the families of Taira and Minnamoto the blind officials were everywhere ejected, and those afflicted with loss of sight fell into their early condition of distress and misery. In course of time orders were issued to the local authorities to provide for the blind in their districts, and now they receive the attention and education usual in all civi ized countries. The members of the blind guild, which has long existed, commonly followed two occupations, music or chanting and shampooing or massage, those who practised the former being of a higher grade and frequently enjoying much popular favor. To this day all towns and villages in Japan have their blind shampooers, who go about after night fall with a strange, musical cry. The less skilful among the musicians become professional story-tellers. The higher officia grades, which were at one time opened to the blind, were eagerl sought after; those who held them were provided with speci marks of their office, and during civil wars blind musicians we frequently employed as spies. The art of shampooing as pra

tised by the Japanese blind takes nine years to learn. The pupil for the first three years practises on his master; then he spends three years acquiring the art of acupuncture; and for the remaining three years he is on probation, his master receiving half his earnings. Blind men sometimes distinguish themselves outside their regular occupations. One was a famous go player; and it is recorded that, having beaten a prince at the game, his antagonist in a fit of jealous anger killed him, and was himself executed for the crime. Another was a famous author, and compiled a valuable repertory of information in 635 volumes. The blind also practised usury, and acquired much unpopularity from the way in which they treated their debtors.

Cornet (*Zeitschrift für Hygiene*, x, 1891) has estimated that in the past fifteen years 45.82 per cent of all deaths among males, and 49.33 per cent among females, in prisons, were due to tuberculous disease. Below the age of twenty there was no material difference between the death-rate from tuberculosis among prisoners and that among the ordinary population; but between twenty and forty the death-rate was five times as high among prisoners as among the general population. Some of this excess is attributable to insufficient exercise and ventilation, and to want of variety in food. Another cause lies in the probable infection of cells by tubercle bacilli, insufficient care in disinfection being observed. In a considerable proportion of cases of tuberculosis in prisons the disease had existed prior to the incarceration, as is shown by the number of deaths from tuberculosis during the first few months of imprisonment.

— Max O'Reil is a little previous in saying in his "Frenchman in America" that St. Johnsbury, Vt, has a museum, but the Franklin Fairbanks Museum of Natural Science is to be opened to the public in a few weeks. In anticipation of the opportunities to be afforded by the museum, a Natural History Society was organized last spring. Some interesting meetings were held in Atheneum Hall but during the latter part of the summer not a large number could attend. This autumn a reorganization of the society was made, good meetings have been held, and quite a programme laid out for the winter. The meetings will be held in the hall of the museum when that is opened, where special facilities will be afforded the departments of ornithology, conchology, mineralogy, and botany for pursuit of these branches so far as collections may be an aid.

— A very valuable find of skeletons has been made in Egypt by Mr. Flinders Petrie, who has recently opened a number of tombs previously intact at Medum, belonging to the beginning of the fourth dynasty. This is the earliest known date of Egyptian remains, and that to which Egyptians ascribe themselves. The skeletons are well preserved, but tender and friable. Some of them bear unmistakable evidence of rheumatic changes, and consequently indicate that at that very remote period man was subject to and suffered from this, as is now shown from its antiquity, venerable disease. No ornaments or objects of art, except occasionally some rough pottery or a wooden headrest, were found with these remains. The greater number were interred in a contracted position with the knees drawn up to the breast, even when the tomb was long enough to allow burial in the extended position, the body placed on the left side, wrapped in linen cloth, the head always to the north and the face to the east. A few, however, apparently the bodies of the highest class or race, were interred in the extended position along with vases of stone or pottery and headrests. At this period there is no trace of mummification. The essential difference in the mode of interment seems to point to difference of race, and it is probable that the contracted burials are those of the prehistoric race of Egypt, while the dynastic race were interred with the body extended. It is extremely interesting to find these contracted burials common at so early a date in Egypt, as a similar mode was adopted by the earliest inhabitants of Great Britain. Mr. Petrie has brought the skeletons to England, and deposited them at the College of Surgeons, where they are being treated (*Brit. Med. Jour.*) so as to strengthen them and render them available for the anatomical investigation which Mr. Petrie intends to have made in order to determine, if possible, their ethnographical affinities.

— There are not many remains of the ancient Mexican feather-work which excited the surprise of the Spanish conquerors of the New World. The most famous surviving specimen is the standard, described by Hochstetter, which is now in the Vienna Ethnographical Museum. Another specimen has lately been discovered by Mrs. Zelia Nuttall in the Schloss Ambras, near Innsbruck, says *Nature*, Nov. 10. It is mentioned in an inventory, drawn up in 1596, of the treasures of the castle. This very valuable relic is the decorative part of a round shield made of interlaced reeds, and consists of feather-mosaics representing a monster, the contours of which are fastened by strips of gold. Formerly the shield was adorned with costly quetzal feathers, only small fragments of which survive. *Globus*, which has an interesting note on the subject, speaks of similar old Mexican schields in the Stuttgart Museum, and refers to a statement of Stoll to the effect that beautiful feather-ornaments are still made by the Indians of Guatemala.

— Thompson (*Lancet*, Oct. 24, 1891) has recorded the case of a blacksmith who was struck in the left eye by a fragment of flying steel. Both eyes soon displayed evidences of irritation, with considerable impairment of vision in the left. Ophthalmoscopic examination of the injured eye revealed the presence of a foreign body in the retina, together with slight exudation and hemorrhage, and a number of fine, obaque striæ in the vitreous body. The patient being etherized, the original wound was reopened and the curved pole of an electro-magnet was introduced and passed through the vitreous in a direction corresponding to that apparently traversed by the foreign body. The second application was followed by the appearance of the bit of steel "in tow" of the magnet. The small bead of vitreous that presented was snipped off, the eye was antiseptically irrigated, and a compress was applied. In the course of a short time the manifestations of irritation subsided and vision became improved, though a slight patch of opacity remained upon the retina, and the field of vision was correspondingly limited.

— At the Académie de Médecine M. Chaveau read a long paper on the relations existing between small-pox and vaccine as regards the transformation of the virus (*Medical Press*, Nov. 4). He said that the idea that vaccine was only a transformation of small-pox continued to obtain a large number of partisans. He, on the contrary, believed that the virus in both cases proceeded from the same origin. It was true the absolute proof was not yet established, but that they were distinct affections de did not doubt. Attempts were made by a Lyons committee to transform human small-pox into vaccine by inoculating cows, but the virus remained the same as to its nature even after several cultivations, consequently it must be accepted that the simple passage of pox virus in the organism of the cow or horse is entirely incapable of changing this virus into vaccine. Vaccine never produced small-pox in man, nor did human small-pox ever become vaccine when inoculated into animals. Vaccine is not, consequently, an attenuated small-pox.

— A Colombo journal gives an interesting description of the manner in which the natives of Ceylon mine for plumbago. A native usually drives a shaft until he is no longer able to contend with the flow of water in the mine. He then stops working, and afterwards drives galleries, and this he continues to do as long as his lamps will burn; but the moment they are extinguished by the gases collected in the gallery he ceases working in that part and continues upwards, refilling the shafts he has dug with the débris from the mine. In other cases, instead of sinking a shaft, a large open cutting is made, in which the vein is followed, and galleries afterwards run as occasion may require. There is no system for ventilating the mines, and the result is that after a blast much time is wasted before the mine is sufficiently cleared of foul gases to allow working to be resumed. The great object of the native proprietor is to keep his expenses as low as possible. As to the timber he is using, he knows nothing of its strength, and is quite unable to work out the strain it will stand. The result is that the shafts and galleries are frequently insufficiently timbered. The windlass used is frequently not strong enough and has no ratchet-wheel, so that serious accidents may occur in raising and

lowering miners. The rope is the ordinary coir rope of the country, the strength of which varies very much according to the make and the quality of the fibre used. Instead of ropes, ladders are frequently used by the miners, and these are made of the roughest materials and frequently tied with jungle rope or ordinary coir yarn. There is no regulated distance between the rungs, and the ladder is placed perpendicularly to the bottom of the pit, and when it is remembered how highly lubricated the wood must get from the hands and feet of the natives who have been working plumbago, the great danger they run every time they mount and descend can be well conceived. Various minerals are dug out of plumbago mines with which the natives have no acquaintance, and consequently valuable minerals are sometimes thrown away. Pitchblende, known as a valuable ore of uranium, has been found inside plumbago ; pyrrhotite also is found largely in plumbago mines, from which, in other countries, the greater part of the nickel of commerce is extracted.

— The past year was a prosperous one for the Colorado College Scientific Society. The following is a complete list of papers and reports presented to the society: Oct. 14, 1890, The Abandonment of Children in Ancient Greece and Rome, by George L. Hendrickson; Recent Researches in Magnetism, by Florian Cajori; Nov. 14, Witchcraft among the Hindus, by Dr. H. W. Magoun; Dec. 11, Protection of Congressional Minorities, by W. M. Hall; Pulsations in the Aortic Arches of the Earthworm, by Miss M. R. Mann; Solidarity of the Race, by J. M. Dickey; Jan. 13, 1891, Dialectical Studies in West Virginia, by Dr. Sylvester Primer; Men for the Hour, by H. J. Barber; Feb. 10, Germ Theory of Disease, by Miss M. R. Mann; On Two Passages in the Crito, by Dr. H. W. Magoun; Mar. 24, On van't Hoff's Law of Osmotic Pressure (published in the *Chemical News*, Apr. 10, 1891), by D. J. Carnegie; The Aryan Question, by Dr. Sylvester Primer; Apr. 21, An Interpretation of the Fourth Gospel in the Light of Gnostic Philosophy, by President William F. Slocum; The Elliptic Functions Defined Independently of the Calculus, by F. H. Loud; The Study of Diophantine Analysis in the United States, by F. Cajori; May 12, Cross Ratio, by B. E. Carter, Jun.; Calibration of Burettes, by D. J. Carnegie; June 9, On a Passage in the Frogs, by Dr. H. W. Magoun; Note on the Hadley-Allen Grammar, by Dr. H. W. Magoun; Historical Note on the Differentiation of a Logarithm, by F. Cajori; A Mathematical Error in the Century Dictionary, by F. Cajori.

— The last volume of the memoirs of the Statistical Section of the Russian Geographical Society contains an interesting work by M. Borkovsky, who has devoted more than twenty-five years of his life to the study of the grain-production of Russia, and the directions in which cereals are transported within Russia both for export and for home consumption. The results, according to *Nature*, totally upset the current theory as to Russia being a granary of Europe, and are grimly confirmed by the famine which now prevails in several provinces of the empire. In appears from M. Borkovsky's figures and maps that Russia may be divided into two parts, strictly dependent on her orographical structure: one of them, which corresponds to the south eastern slope of the broad swelling which stretches across the country from south-west to north-east, has an excess of grain during the years of good crops, which excess sometimes exceeds twice or thrice the wants for local use. But there is also another part — the north-western one — which always has less corn than is wanted for its population. Taking the years 1882–85, which were years of average crops, a line traced from Kieff to Nijni-Novgorod and further north east divides Russia into two almost equal parts, of which the south eastern exports wheat and rye into the north-western part to the amount of no less than 710,000 tons of wheat and 508,000 tons of rye, the exports to foreign countries attaining at the same time the respective figures of 1,780,000 and 1,029 600 tons. Taking into account the respective populations of the two regions, and the amount of corn consumed by the distilleries (which does not exceed 14 English pounds per inhabitant), M. Borkovsky shows that the total consumption of wheat and rye attains only the figure of 437 pounds per inhabitant (109 pounds of wheat) in the exporting region, and the still lower figure of 382 pounds (46 pounds of wheat) in the region which imports corn. The average consumption throughout Russia thus attains only 430 pounds per inhabitant, out of which 14 pounds must be deducted for the use of the distilleries. The figures will certainly seem very low if it is remembered that the great mass of the Russian peasants consume extremely small quantities of meat — bread being their chief and almost exclusive food. It appears, moreover, that if Russia exported no grain at all, and the whole of the crop of cereals were consumed within the country, the average consumption would nearly approach the average consumption in France — that is, 505 English pounds on an average year; while the surplus obtained during years of exceptionally good crops would only cover the deficit during the bad years, which recur in the steppes of South-east Russia with almost the same regularity as in India, i.e., every ten or twelve years.

— The experiment department of the Ontario Agricultural College at Guelp reports, in bulletin 49, the following experiment: In the fall of 1890 five hundred grade lambs were purchased in the eastern part of Ontario. As purchased they were turned into rape fields and fed upon the rape until Oct. 20, when ninety were selected for the experiment. These were shorn Oct. 22 and 23, and weighed October 24. They were pastured on the rape in fine weather, but kept housed in rough weather until Nov. 21, after which they were confined to the sheds and the yards in front. The shed was a large building, with ceiling 10½ feet high and hay-loft overhead. It was divided into compartments large enough to hold 16 or 17 lambs, each compartment having a small yard attached. The lambs were fed a ration consisting of oats 7 parts, oat screenings 1 part, peas 3 parts, and bran 1 part by weight, together with all the hay they would eat, and an average of three pounds of sliced turnips per day — beginning with one pound and increasing to five pounds. They were fed from November 21, 1890, to April 24, 1891, when they had consumed a total of 12,108 pounds of oats, 1,062 pounds oat screenings, 4,712 pounds peas, 1,777 pounds bran, 13.9 tons hay, and 25.15 tons turnips. The average weight of the lambs at the beginning of the experiment was 84 85 pounds, and at the end 135 pounds. The average gain per month was therefore 8.25 pounds. At the end of the experiment ten more lambs were added to the lot, making one hundred in all, and these were shipped to Liverpool, where they arrived in good condition and were sold at an average of $11.79 per head, the cost of shipment being $3.75 per head. It is stated that this cost was excessive, owing to the small number shipped, and that larger lots could be shipped at $2.50 to $3.00 per head. Of the ten lambs added to make up the hundred, five were freshly shorn and five had not been shorn at all. It was found that the autumn shorn lambs stood the journey better than either the unshorn or those freshly shorn, and that they occupied less space than the unshorn lot on shipboard.

— The following, briefly stated, are prize subjects recently proposed by the Dutch Academy of Sciences, at Haarlem: (1) Molecular theory of internal friction of gases departing from Boyle's law, and if possible, of liquids. (2) Determination of the duration of electric vibrations in various conductors. (3) Try inoculation of *Viscum album* on apple, pear, chestnut, and lime trees, and explain its preference for certain species. (4) Criticism of opinions on structure and mode of growth of the cell-wall, having regard to continuity of the protoplasm of the adjacent cells (in some cases). (5) New experiments on the reproductive power of parts of plants, and the polarity observed in it. (6) Study of the low organisms appearing (usually as filaments) in bottles containing solutions of chemical products, after long standing. (7) Significance of peptones for the circulation of nitrogen in plants. (8) Oxidation of ammoniacal salts in the ground, and transformation into nitrates. Do the microbes found by Winogradsky and Frankland exist in the soil of Holland? (9) Researches on the organism concerned in production of marsh gas, or the conditions in which the gas is formed, if life has only an indirect influence on the phenomenon. Liberation of the gas from manure. (10) Study of the microbes involved in ensilage of green fodder, and of the variations of sugar and acidity with temperature and time. (11) The development of Triclades. (12) The development of the

spleen. The prize offered in each case is a gold medal or a sum of 150 florins. Memoirs may be written in Dutch, French, English, Latin, Italian, or German (not German characters), and they are to be sent in, with sealed packet, to the secretary before January 1, 1893. (Further particulars in the *Revue Scientifique*, Oct. 10, 1891.)

— A conference of educators began Nov. 2 at Newberry Library, Chicago, according to a despatch to the New York *Tribune*, to discuss the methods of executing the general design already formed of inaugurating University Extension work in Chicago. There were present President Harper of the University of Chicogo, President Rogers of the North-western University, President Chamberlain of Madison University, President Eaton of Beloit University, President Coulter of the University of Indiana, Regent Burrill of the University of Illinois, Professors Moss and Forbes of the University of Michigan, Professors Turner and Freeman of Madison University, Professor Young of the North-western University, and Dr. Poole of the Newberry Library. President Rogers presided, and the session was private. There was a difference of ideas amounting almost to friction as to how university extension should be effected. The Newberry Library will equip rooms and furnish books, the public Library will assist, and instructors will be provided in abundance. But there the agreement ends. There is a radical difference of opinion as to whether the university should co-operate in the work, or each university carry on its work separate from the others. Dr. Harper stands for those who insist on separate work, and Dr. Rogers for those who insist on co-operation.

— At the meeting of the Royal Meteorological Society, Nov. 18, the following papers were read: (1) "Account of an Electric Self-Recording Rain Gauge," by Mr. W. J. E. Binnie. This is a very ingenious instrument, and has been constructed on the assumption that all drops falling from an orifice or tube are identical in weight, as long as the dimensions of the orifice are not varied. (2) "On Wet and Dry Bulb Formulæ," by Professor J. D. Everett. This is a criticism of the methods investigated some years ago by Mons. August and Dr. Apjohn for determining, by calculation, the maximum vapor tension for the dew point from the temperatures of the dry and wet bulb Professor Everett also criticises the values adopted by Regnault, and says that in presence of the uncertainty as to a rational formula, he thinks Mr. Glaisher did wisely in constructing his table of factors, which give the dew point approximately by the most direct calculation which is admissible. The inherent difficulties of hygrometric observation and deduction are great, and have not yet been fully overcome. (3) "Results of Meteorological Observations made at Akassa, Niger Territories, May, 1889, to December, 1890," by Mr. F. Russell. This was in continuation of a former communication respecting the same place. After detailing the results of the various observations, the author says that this period was very unhealthy, and the year 1890 especially so. The weather was exceptionally dry, with small-pox and phthisis amongst the native population. The West Coast reports generally were also unfavorable in reference to the condition of resident Europeans, and at the principal ports quarantine regulations were put in force, consequent upon an outbreak of yellow-fever in places situated to the south-west. At Bonny ten deaths occurred from November to February out of a population of some sixteen Europeans.

— The Brooklyn Institute December bulletin of lectures is as follows: Dec. 1, Department of Philology, lecture in the course on "The Victorian Poets," by Mrs. Abby Sage Richardson, subject, "Robert and Elizabeth Browning;" Dec. 1, Department of Entomology, lecture by Professor John B. Smith of Rutgers College on "The Morphology of the Tools and Weapons of Insects;" Dec. 2, Department of Geology, lecture by Professor William B. Scott of Prlnceton College on "The Age of Mammals;" Dec. 3, Department of Psychology, lecture by Professor Franklin W. Hooper on "The Physics and Psychology of Seeing;" Dec. 4, Department of Philology, second of the Shakesperian Recitals, by Mr. Hannibal A. Williams of New York, subject, "Julius Cæsar;" Dec. 4, Department of Electricity, lecture by Mr. William S. Barstow, general superintendent of the Edison Illuminating Company on "The Direct Application of the Armature of a Motor to the Running of Machinery;" Dec. 5, Department of Chemistry, lecture by Dr. Arnold Eiloart of Cornell University on "The Arrangement of Atoms in Space, or Stereo-Chemistry;" Dec. 7, Department of Microscopy, lecture by the Rev. Frederick Carter of Montclair, N.J., on "Desmids;" Dec. 8, Department of Philology, lecture in the course on "The Victorian Poets," by Mrs. Abby Sage Richardson, subject, "Longfellow, Lowell, and Whittier contrasted;" Dec. 8, Department of Engineering, lecture by Mr. C. J. H Woodbury, vice president of the Boston Manufacturers' Fire Insurance Company of Boston, on "The Proper construction of Buildings to Resist Destruction by Fire;" Dec. 9, Department of Music, lecture by Mr. W. J. Henderson of the New York College of Music on "The Development of the French Drama;" Dec. 9, Department of Zoology, lecture by Mrs. Annie Chambers-Ketchum of Rutgers College, New York, on "The Evolution of the Lower Reptilia;" Dec. 10, Department of Painting, lecture by Mr. William Ordway Partridge on "The Practical Details of Modelling;" Dec. 10, Department of Political and Economic Science, Mr. Bolton Hall of New York has been invited to lecture. Discussion of the lecture by members of the department. Large lecture-room; Dec. 11, Department of Philology, third Shakesperian Recital, by Mr. Hannibal A. Williams, subject, "The Taming of the Shrew;" Dec. 11, Department of Geography, lecture by Mr. Charles M. Skinner of the Brooklyn *Eagle* on "The Mountain Systems of British Columbia," illustrated by photographic views of mountain scenery; Dec. 12, Department of Mathematics, lecture by Mr. Julius Henry Cone of the Brooklyn Classical School on "The Teaching of Algebra;" Dec. 14, Department of Astronomy, paper by Mr. Gardner D. Hiscock on "The Constitution of the Sun." The paper and the discussion following will be illustrated by lantern photographs; Dec. 15, Department of Philology, lecture in the course on the "Victorian Poets," by Mrs. Abby Sage Richardson, subject, "The Modern Spirit in Poetry;" Dec. 15, Department of Botany, lecture by Dr. Byron D. Halstead of Rutgers College on "Typical Forms of Cryptogamia;" Dec. 16, Department of Architecture, lecture by Mr. Russell Sturgis, president of the New York Architectural League, on "Museums for the People;" Dec. 16, Department of Mineralogy, lecture by Mr. Edgar A. Hutchins, member of the Institute, on "Quartz and its Varieties;" Dec. 17, General Meeting of the Members of the Institute, address by Professor Truman J. Backus, LL.D., president of the Packer Collegiate Institute, on "The Age of Discovery;" Dec. 18, Department of Philology, fourth Shakesperian Recital, by Mr. Hannibal A. Williams, subject, "The Winter's Tale;" Dec. 18, Department of Electricity, lecture by Mr. J. Stanford Brown on "Electrical Units in Theory and in Practice;" Dec. 19, Regular Monthly Meeting of the Council; Dec. 21, Department of Archæology, lecture by Dr. Theodore F. Wright of Cambridge, Mass., secretary of the Palestine Exploration Society, on "The Recent Archæological Explorations in Palestine;" Dec. 22, Department of Philology, last of the series of Shakesperian Recitals, by Mr. Hannibal A. Williams subject, "Othello;" Dec. 22, Department of Psychology, lecture by Dr. Thomas Balliet of Springfield, Mass., on "The Physics and Psychology of Hearing;" Dec. 23, Department of Physics, lecture on "Static Motors;" Dec. 26, Department of Archæology, organization of a section of Numismatics, lecture by Dr. Charles E. West, LL.D., president of the Department, on "Jewish Coins;" Dec. 28, Department of Photography, lecture by Mr. Wallace Gould Levison on "Photography as an Aid to Science, History, and Art;" Dec. 29, Department of Music, concert by the Beethoven Quartet Club of New York, assisted by a vocalist; Dec. 30, Department of Philology, German section, lecture by Professor Frederick W. Grube of the Boys' High School on "The Philology of the German Case Endings;" Dec. 31, General Meeting of the Members of the Institute, lecture by Mr. Garrett P. Serviss, president of the Department of Astronomy, on "The Old Year and the New," or "The Revolutions of Worlds." After paying the initiation fee of $5, associate membership in the Institute costs only $5 a year; extra tickets of admission for the month of December, $4; extra tickets for one week, $1.50; single admission, 50 cents.