ing the storm on June 6. Two flashes, seen on one plate, show complicated and beautiful structure: one of them is a multiple flash, and flame-like appendages point upwards from every angle; the other is a broad ribbon, and, although the plate shows signs of movement, the displacement is not in a direction such as would produce a ribbon-like effect from a linear flash. The second plate shows four flashes, none of which are ribbon-like, though the camera had moved considerably. The third plate was exposed to six flashes, one of which was believed to pass down the middle of the plate; but, on development, only a triple flash in one corner of the plate was seen. Careful search, however, revealed the central flash as a dark one with a white core, and other dark flashes were subsequently found. The plate was very much over-exposed, and this suggested that black flashes might be due to a sort of cumulative action caused by the superposition of the glare from a white cloud upon the normal image of the flash. To test this, sparks from a Wimshurst machine were photographed, and, before development, the plates were exposed to diffused gaslight for a short time. The bright sparks yielded normal images with reversed margins, and the faint ones were completely reversed. Other experiments showed the reversal to spread inwards as the time of exposure to gaslight increased. Finally, reversal was effected by placing a white screen behind the spark, to represent a white cloud, the only illumination being that of the spark itself.

In the discussion which followed, Mr. W. N. Shaw exhibited a photograph taken during the same storm, which is particularly rich in dark flashes branching outwards from an intensely bright one. In some places the bright line has dark edges, and in one part a thin bright line runs along the middle of an otherwise dark portion of the flash. In answer to Mr. Inwards, Mr. Shaw said the plate was exposed about half a minute; and the former thought, that, under those conditions, the appearance of the plate did not contradict Mr. Clayden's hypothesis. Speaking of the same photograph, Professor Perry considered that Mr. Clayden's observations would explain the result, for a bright flash required more exposure to diffused light to reverse it than a faint one did. Professor Ramsay reminded the meeting that Professor Stokes's "oxides of nitrogen" explanation was still a possible one; and Mr. C. V. Burton asked whether they may be due to faint sparks cutting off light from brightly illuminated clouds, just as a gas-flame absorbs light from a brighter source. In reply, Mr. Clayden thought the "oxides of nitrogen" hypothesis improbable, and said his experiments did not enable him to answer Mr. Burton's question. As regards Mr. Shaw's plate, he believed the diffused light from the clouds would be sufficient to reverse the fainter tributary flashes, although it was insufficient to reverse the primary one. From data obtained when the ribbon-flash was taken, he had made some calculations which gave the height of the clouds about 1,000 yards, and the ribbon-flash 1,300 yards long and 100 yards wide.

PERMEABILITY OF IRON. — From experiments conducted during the last two years, J. T. Bottomley, F.R.S., finds that the permeability of iron can be enormously reduced by repeated heatings and coolings while undergoing magnetic cycles of small range.

AUTOMATIC ELECTRIC RAILWAY-LAMPS. — Mr. H. J. Dowsing, in a letter to the *Electrical Review* of July 12 (London), claims to have invented a lamp for train use. A penny is dropped into the apparatus, a handle half turned, and the light immediately shines forth; and without any arrangement of clockwork trains, springs, etc., the time is controlled and the light goes out at the end of half an hour. An advantage which perhaps could not be so easily managed by clockwork is, that one can arrange the apparatus to burn any time, from two minutes to say ten hours, by one half-turn of the handle.

HEALTH MATTERS.

Water-Supply of Paris.

THE Paris correspondent of the *Lancet*, writing in the issue for June 22, says that a great danger to visitors to Paris is due to the insufficiency of the water-supply. Paris is in a most unfortunate position. It cannot be said that the water-supply is bad. On the contrary, at immense cost, Paris has secured one of the best water-supplies enjoyed in any town of Europe. According to the last report, Paris was receiving 121,000 cubic metres of the Vannes water, 21,000 cubic metres derived from the Dhuis, and 5,000 cubic metres from the St. Maur springs, — in all, 147,000 cubic metres of pure and excellent spring-water. This, however, is not enough. The daily consumption is estimated at 158,000 cubic metres. The deficiency is not very great: still it is enough to compromise the whole town; for, when the store of good water is exhausted, the Seine water is provided, and this through the same channels and without warning. Thus, though a person may, as a rule, drink wholesome water, he will receive for a week or so, during the course of the year, water taken from the Seine, which is very likely to be contaminated. Again: a person may drink a glass of water in one quarter of Paris which is perfectly pure, while in another district he may, on the same day, get water that is certainly not free from the occasional presence of injurious organic matter. At the present moment, the supply of spring-water having reached a low ebb, the Seine water is turned on in four arrondissements. For twenty days these unfortunate districts are to receive only the Seine water; then three other arrondissements are to be served in the same way.

In the pavilion of the prefecture of the Seine, situated in the central court or garden of the exhibition, will be seen three glass tanks of water side by side. One receives the water of the Ourcq Canal, another of the Seine, and the third of the Vannes. The first two are more or less opaque, are of a green-yellowish tint, and vary more or less in aspect from day to day; but that which contains the water of the Vannes is always perfectly transparent, and never changes. Members of the Municipal Council have urged, so far in vain, that the water-supply should be increased. There are numerous projects, and recently a resolution was passed by the council, calling upon the legislative chambers to discuss at once the scheme for bringing the waters of the Avre to Paris.

That the Seine water may be dangerous will be obvious to all who are acquainted with the neighborhood of Paris. The intake for the supply is, of course, outside the town, and some little distance up the stream, but it is unpleasantly near the large manufactories of *poudrette*, or human guano. Also there are boats containing tanks which are filled with the contents of cesspools, and the manure is thus conveyed up the river to the works. A few years ago some scavengers, in their impatience to finish their day's toil, instead of conveying all the soil the barges contained to the works, simply threw a considerable portion over into the river. Fortunately this was discovered; and now there is a service of inspection organized both day and night, and careful watch is kept that these tank-barges should not again contaminate the water. But there are other causes of pollution, and it is an undeniable fact that many outbreaks of typhoid-fever in Paris have occurred about a fortnight after the substitution of Seine water for the usual and pure supply of water from the Vannes or the Dhuis. The question of water-supply is a very serious problem, which the French authorities should lose no time in settling.

THE NAPHTHA HABIT. — The *Medical Standard* calls attention to the growth of the "naphtha habit" among the female employees of rubber-factories. The inhalation of naphtha-fumes produces a peculiarly agreeable inebriation. Naphtha is used to clean rubbers, and is kept in large boilers, to the valve of which the female employees obtain access, and breathe the fumes. The habit was introduced from Germany, and is chiefly found in the New England States.

NOTES AND NEWS.

THROUGH the efforts of Dr. Filip Trybom, the Swedish Oyster-Culture Society is attempting to acclimatize the American oyster, imported from Connecticut, in several places along the coast of the province of Bohus. The young oysters seem to thrive well.

— The Victorian Government statist has published a return of the estimated population of the Australian colonies for 1888. In Victoria the estimated population on Dec. 31 last was 1,090,869; New South Wales, 1,085,356; Queensland, 387,463; South Australia, 313,065; western Australia, 42,137; Tasmania, 146,149; New Zealand, 607,380; making a total of 3,672,419 for the whole

of the colonies. During the year the population of the Australian colonies increased 120,668: the increase in Victoria being 54,750; New South Wales, 42,437; Queensland, 20,523; South Australia, 4,381; western Australia, 351; Tasmania, 3,671; New Zealand, 4,019.

— The *rôle* played by vegetation in determining the character of land surface is well shown in the so-called "banana-holes," so abundant in New Providence and other of the Bahama Islands, — holes varying in size from that of a pint cup to that of a large cistern. They are suggestive of pot-holes, but can have no such origin, and are evidently not cut out by the waves at any previous period of subsidence. Professor Charles S. Dolley, who recently examined these holes, could account for their formation in but one way, and that is through the action of decaying vegetable matter. Each of these holes contains large quantities of leaves and other vegetable substances, which, being kept wet by the heavy rains and by the fresh water elevated by each rising tide (almost all wells have a regular ebb and flow in these porous islands), undergo fermentative changes, by the products of which the soft calcareous rock is dissolved, and leaches away.

— *L'Economiste Française* says that on the 31st of December, 1887, the total length of railways worked in Europe amounted to 207,939 kilometres (the kilometre being equivalent to .621 of a mile), as compared with 201,468 kilometres in the preceding year. The increase in 1887 was therefore 6,471 kilometres, or at the rate of 3.21 per cent. The openings to traffic of the new lines which took place in 1887 increased by 2.67 per cent the length of the French system, while the percentage increase was 3.18 in Germany, 5.59 in Austria-Hungary, 3.71 in Belgium, 1.03 only in the United Kingdom, 3.92 in Italy, 2.96 in Russia. Roumanian lines increased 21.25 per cent in 1887. The extent of French railway lines opened in the course of 1887 represents 13.77 per cent of the total length of line opened in the whole of Europe during the same period. The participation of Germany in the increase of the European railway system is 18.87 per cent; Austria, 20.21 per cent; Belgium, 2.60 per cent; Great Britain and Ireland, 5 per cent; Italy, 6.76 per cent; and Russia, 12.67 per cent.

— Professor Edward H. Griffin of Williams College has accepted in Johns Hopkins University the office of dean, and professor of the history of philosophy, and he will enter upon his new duties at the beginning of the next session. He was graduated at Williams College in 1862, and subsequently pursued the study of theology in Princeton and in New York. Since 1872 he has been a professor in Williams College, having recently occupied the chair of intellectual and moral philosophy which bears the name of Mark Hopkins. Professor Griffin received the honorary degree of D.D. from Amherst in 1880, and of LL.D. from Princeton in 1888.

— It appears, according to *Nature*, that the meteoric stone found in Scania, and acquired by Baron Nordenskiöld for the National Museum at Stockholm, fell on April 6, and that its fall was accompanied by a red flash like lightning and a thunder-like detonation. It weighs eleven kilograms, and had made a hole thirty centimetres in depth; but, having recoiled, it lay on the level ground at the edge of the hole. The color is grayish black, and the fracture grayish white. From a hasty analysis made by Herr A. Wingardh of Helsingborg, the chief mass appears to consist of manganese, in which are yellow and gray particles of metal. The meteorite seems to have been in a red-hot state, being covered with a glazed coating of fused metal half a millimetre in thickness.

— The international congress which met in Paris in 1887 to make arrangements for the preparation of a photographic chart of the heavens expressed a wish that a similar congress might meet for the discussion of questions relating to celestial photography in general. M. Janssen and Mr. Common were asked to take such steps as might be necessary for the attainment of this object; and afterwards, by a ministerial decision at Paris, an organizing committee, with M. Janssen as president, was appointed. The arrangements have now been completed, and the congress will be held in Paris from Aug. 22 to Sept. 3. The aim of the congress will be to determine the methods which are most suitable for each branch of celestial photography, and the means by which the results obtained by these methods can be most effectually published and preserved.

— W. F. C. Hasson, a graduate of the United States Naval Academy, and now an assistant engineer of the United States Navy, has been detailed by the United States Navy Department to give instruction for the next three years in mechanics and engineering at Johns Hopkins University, and has already entered upon the duties of his new post.

— W. J. Stillman writes to *Nature*, June 27, from Canea, Crete, that he has just witnessed a curious case of bird instinct which seems worth recording. A gardener living at Zukaleriá, three miles from Canea, caught in his garden a young but fully fledged sparrow, which he brought to the house of a friend with whom the writer was staying in Canea, leaving home early in the morning. He presented the bird to one of the children in the house, and it was put in a cage and hung at the window, where it seemed likely to be contented, losing its fright after a few hours. Late in the afternoon an old bird was noticed fluttering about the cage, apparently trying to get at the little one; and the young bird, on its appearance, became frantic to get out to the old one. It was evidently the mother of the young one, as the recognition was too cordial to have been owing to the interest of a strange bird; and when Mr. Stillman's daughter opened the cage, as she did after a little, they both flew off rapidly in the direction of Zukaleriá. It is impossible that the old bird should have followed the gardener, as it would have been seen by them earlier in the day.

— The Botanical Society of France announces the following programme of the forthcoming botanical congress to be held in Paris: Tuesday, Aug. 20, opening sitting of the congress at 2 P.M., at the hotel of the Horticultural Society, 84 Rue de Grenelle; reception of foreign members at 8.30 P.M. Wednesday, Aug. 21, sitting at 9 A.M., devoted to the consideration of the first question, on the utility of an agreement between the different botanical societies and museums, for the purpose of drawing up charts of the distribution of species and genera of plants on the globe; and other communications, if time allows. Thursday, Aug. 22, excursion in the neighborhood of Paris. Friday, Aug. 23, sitting at 9 A.M., devoted to the consideration of the second question, on the characters furnished by anatomy for classification, and other communications if time allows; in the afternoon a visit to the botanical collections and laboratories of the Museum of Natural History, and of the other large scientific establishments in Paris. Saturday, Aug. 24, sitting at 9 A.M., miscellaneous contributions; in the afternoon a visit to the exhibition. Sunday, Aug. 25, banquet to the foreign botanists. During the following week several botanical excursions will also be arranged. Special arrangements with regard to railway-fares will be made in favor of botanists announcing their intention to be present to M. P. Maury, the secretary to the committee of organization, 84 Rue de Grenelle, before July 25.

— The sixty-second meeting of German naturalists and physicians will be held at Heidelberg from Sept. 17 to Sept. 23. One whole day will be devoted to excursions in the neighborhood, and on the evening of Sept. 23 the Castle of Heidelberg will be brilliantly illuminated.

— Satisfactory progress is being made with the preliminary arrangements in connection with the Electrical Engineering and Mechanical Inventions Exhibition, which is to be held in Edinburgh next year to commemorate the opening of the Forth Bridge. Support has been promised from this country, and some of the exhibits in the Paris Exhibition are to be transferred to Edinburgh.

— In 1887–88 the courses in astronomy at Johns Hopkins were so extended as to justify its being chosen as a principal subject by candidates for the degree of doctor of philosophy. A small observatory has been erected, and is fitted up with a meridian circle by Fauth & Co., a portable transit instrument by Troughton, a clock, a chronograph, and other subsidiary apparatus. In the dome of the physical laboratory is mounted an equatorial of 9½ inches aperture, so fitted that the student can learn to make the usual determinations with the largest instruments of that class. The work in astronomy consists in a study of the history and practice of the subject, supplemented by instruction in the use of the instruments, and exercises in astronomical computation. During the year 1889–90 the courses are intended to cover a wider range of individual subjects than usual.

— Dr. Henry M. Hurd, now superintendent of the State Hospital for the Insane at Pontiac, Mich., in the neighborhood of Detroit, has been appointed superintendent of the Johns Hopkins Hospital. His life has been devoted to hospital service, and he has acquired distinction as an administrator, and also as a writer. He was graduated in arts and in medicine at the University of Michigan, and has twice been called by his *alma mater* to a professorship of medicine. He has already visited Baltimore, and will permanently assume his new responsibilities on the first of August next.

— Messrs. Dubois and François of Seraing, Belgium, have devised a system of drilling and breaking down rock and coal, to which they have given the name of "Bosseyage Mécanique." This system consists in first boring a hole, and then in breaking down the rock by a compound wedge formed of two half round outer portions, and a central tongue or arrow. The boring or jumping tool is taken off the drill spindle, and is replaced by a tup, by which the central wedge is driven forward by repeated blows until the rock gives way, and a part of it falls down.

— It is stated, apparently on good authority, that the money taken at the Eiffel Tower elevators between May 15 and July 2 has amounted to 1,298,944 francs, or nearly $260,000. If these figures be correct (and there seems no reason to doubt them), the Eiffel Tower will prove as great a success as every other part of this wonderful centennial celebration.

— Mr. and Mrs. Lawrence Turnbull of Baltimore have founded in the Johns Hopkins University a lectureship of poetry in memory of their deceased son, Percy Graeme, who was born May 28, 1878, and died Feb. 12, 1887. The lectureship will bear the name of "The Percy Turnbull Memorial Lectureship." The income of the foundation is one thousand dollars per annum, and the first course of lectures may be expected in the session of 1889–90.

— Mr. Eugene Levering of Baltimore has offered to the Johns Hopkins University the sum of twenty thousand dollars for the construction of a building for the uses of the Young Men's Christian Association, and for the promotion in other ways of the interests of that society.

— On the motion of Lord Charles Beresford, a parliamentary return has been prepared, giving particulars of all breech-loading iron and steel guns that have failed after delivery for service. The return states that no guns have burst, or "blown out," or rendered the breech-piece useless, and no gun has been rendered useless by erosion, though between Dec. 31, 1885, and March 19, 1888, nine guns have had to be relined. The number of rounds fired from these nine before relining became necessary varied in the different instances from 114 to 1,480. Six guns were injured from other causes, and required retubing or relining. Only one Elswick gun has failed during the period covered by the report, the rest being all of Woolwich manufacture.

— Among the recent appointments of graduates of Johns Hopkins University we have learned of the following: William J. Alexander (fellow 1881–83, Ph.D. 1883), professor of English, University of Toronto; John C. Adair (graduate student 1887–89), professor of chemistry, Tarkio College, Missouri; Charles M. Andrews (fellow 1888–89, Ph.D. 1889), associate professor of history, Bryn Mawr College; Louis Bevier (fellow 1879–81, Ph.D. 1881), adjunct professor of modern languages, Rutgers College; Frank W. Blackmar (fellow 1888–89, Ph.D. 1889), professor of history and sociology, University of Kansas; Oskar Bolza (reader in mathematics, 1888–89), associate in mathematics, Clark University; Benjamin L. Bowen (Ph.D. 1888), associate professor of French and German, Ohio University; William M. Burton (fellow 1888–89, Ph.D. 1889), chemist, Standard Oil Company, Cleveland, O.; Morgan Callaway, jun. (fellow 1888–89, Ph.D. 1889), professor of English, South-Western University, Georgetown, Tex.; John Daniel (graduate student 1886–88), instructor in physics, Vanderbilt University; Paul J. Dashiell (A.B. 1887), instructor in organic chemistry, Lehigh University; Henry H. Donaldson (fellow 1881–83, Ph.D. 1885, associate and instructor 1885–89), assistant professor of neurology, Clark University; Charles G. Dunlap (graduate student 1883–86), associate professor of English, University of Kansas; Alfred Emerson (fellow 1882–84), professor of Greek, Lake Forest University, Illinois; Joseph A. Fontaine (Ph.D. 1886), professor of modern languages, University of Mississippi; Samuel Garner (Ph.D. 1881), assistant professor of modern languages, United States Naval Academy; Richmond Harding (Ph.D. 1887), professor of Greek, Davidson College, North Carolina; James T. Hatfield (fellow 1888–89), professor of German, North-Western University, Illinois; Clifton F. Hodge (fellow 1888–89, Ph.D. 1889), fellow in psychology, Clark University; James G. Hume (graduate student 1887–88), Rogers fellow in ethics, Harvard University; H. C. G. von Jagemann (fellow 1883–84, Ph.D. 1884), assistant professor of German, Harvard University; David J. Lingle (graduate student 1887–89), assistant professor of biology, Tulane University; Warren P. Lombard (graduate student 1886–87), assistant professor of physiology, Clark University; James L. Love (graduate student 1884–85), Morgan fellow in mathematics, Harvard University; Thomas McCabe (fellow 1887–88, Ph.D. 1888), professor of modern literatures and director of German department, Indiana University; Archibald MacMechan (fellow 1887–88, Ph.D. 1889), professor of the English language and literature, Dalhousie College, Nova Scotia; Franklin P. Mall (fellow 1886–88, assistant in pathology 1888–89), adjunct professor of anatomy, Clark University; Philippe B. Marcou (instructor in French 1880–83), instructor in French, University of Michigan; John E. Matzke (Ph.D. 1888), collegiate professor of French, Bowdoin College; Colyer Meriwether (A.B. 1886), instructor in the English language and literature, Second Higher Middle School, Sendai, Japan; Chase Palmer (A.B. 1879, fellow 1880–82, Ph.D. 1882), professor of chemistry, Wabash College, Indiana; Mansfield T. Peed (graduate student 1883–85 and 1887–89), professor of mathematics, Emory College, Georgia; Edmund C. Sanford (fellow 1887–88, Ph.D. 1888), instructor in psychology, Clark University; Charles L. Smith (fellow 1887–88, Ph.D. 1889), instructor in history, Johns Hopkins University; Kirby W. Smith (Ph.D. 1889), instructor in Latin, Johns Hopkins University; Henry N. Stokes (fellow 1881–83, Ph.D. 1884), chemist, United States Geological Survey, Washington, D.C.; John N. Swan (graduate student 1888–89), professor of chemistry, Westminster College, Pennsylvania; W. Scott Thomas (A.B. 1889), professor of Greek and Latin, Chaffee College, California; Frederick J. Turner (graduate student 1888–89), professor of American history, University of Wisconsin; Amos G. Warner (fellow 1886–87, Ph.D. 1888), professor of political economy, University of Nebraska; John R. Wightman (fellow 1886–87, Ph.D. 1888), professor of French, Iowa College; Lucius E. Williams (graduate student 1885–89), assistant professor of chemistry, Swarthmore College.

— The simple and successful method by which a high chimney was recently overthrown is described by an exchange. The stack was one hundred feet high by ten feet square, and was on the Griswold Mills property, New Bedford, Mass. It was undermined by knocking out the bricks on the west and north sides, and shored up by planks placed in the apertures. These planks were liberally covered with tar and kerosene. When the time arrived for felling the chimney, they were fired. As they became sufficiently burned to cease to support the chimney, the mass settled out of the perpendicular to the north, and then cracked and fell with a crash to the ground. The bricks at the top were scattered over quite an area, while the iron coping was broken in quite a number of pieces. Along the length of the chimney to the height of sixty or seventy feet, masses of brick for a length of two feet or more clung together, and did not break up.

— An interesting series of experiments have been conducted, says *Building*, by the Dutch state railways, for the purpose of ascertaining exactly the relative resistance of various pigments to atmospheric changes and to the corrosive action of sea-water. The results have proved that the red-lead paints are less affected by atmospheric influence than those which are composed of the brown oxides of iron, on account of their adhering more closely to the metal, and of their possession of greater elasticity. It was also discovered that any sort of paint afforded an increased protection if the plates were pickled in hydrochloric acid before its application. The prevention of corrosion by salt water was found to be possible by the admixture of the oxide of some electro-positive metal, such as caustic lime and soda; but the efficiency of such a

covering was destroyed when its alkaline properties had been neutralized by the absorption of carbonic acid. Magnesia, however, was proved to be most serviceable, seeing that it does not absorb carbonic acid; and not only does it protect the iron from galvanic action, but it also does not affect the anti-fouling qualities of the paint.

— We have received the "Annual Report of the Board of Education and the Superintendent of Public Instruction of New Jersey" for the year ending Aug. 31, 1888. The report of the board occupies but a single page, and is of no general interest, while that of the State superintendent is mainly statistical. The State has increased its expenditure for schools of late, the increase for the year reported over the previous year being $450,000; and all the documents before us show that the authorities are alive to the need of educational improvement. It is not many years since the schools of the State were first graded, and the results of the change are reported as gratifying. Manual training has been introduced in a few places, but sufficient time has not yet elapsed to determine its real value. The reports of the county and city superintendents form the largest and most interesting part of the volume before us, but we have not space to particularize any of them. They detail the various methods employed in the different localities, with suggestions on various points. The report contains a large amount of statistical matter conveniently classified and arranged.

— The official returns of the last vintage of France show a sensible improvement over that of the previous year. It produced, says the *Journal of the Society of Arts*, 30,102,151 hectolitres of wine, being an increase of 5,768,867 hectolitres over 1887, and a diminution of 1,601,000 hectolitres only on comparison with the average production of the previous ten years. There were in 1888 1,843,580 hectares under vines. There is an augmentation of production in 37 departments, and a decrease in 40 departments. It is in the southern districts that the improvement is the most marked, while the regions of the east and west are most unfavorable. The departments of the south, which were the first attacked by the phylloxera, have been also the first to reconstitute their vineyards by the introduction of American stocks. These efforts have been in general successful, and in a short time it is hoped this region may regain its former importance. The mildew has in most of these departments been combated by the employment of sulphate of copper. The abundant rains during a portion of the summer, and the fine weather which followed in September, contributed to the development of the grapes, and the gathering was effected in excellent conditions. On the contrary, in the colder regions, the persistent rains of summer checked the ripening of the grapes, and retarded the vintage until the approach of frost. The wine-growers had recourse, as in preceding years, to the employment of sugar to improve the quality and increase the produce of their wines. No less than 36,633 tons of sugar were used for this purpose in 1888. Larger quantities of foreign wines were also imported to meet the demand for mixing. The imports were, from Spain, 7,008,000 hectolitres; Italy, 1,082,305 hectolitres; and Algeria, 1,089,000 hectolitres. The deficiency in the production was also made up by the manufacture of wines from the marc with sugar added, and from dry imported raisins. Of the former, 2,388,000 hectolitres were made; and of the latter, 2,220,000 hectolitres. The production of wine in Algeria is largely on the increase. The quantity made in 1888 was 2,728,373 hectolitres, against 1,902,457 in 1887. There are over 88,326 hectares under culture with vines in Algeria.

— On the evening of Jan. 31 last, about 9 o'clock, says *Nature*, the self-recording barometer at the Deutsche Seewarte showed a sudden dip of about .04 of an inch, with a corresponding jump upwards a few minutes afterwards; and in the course of a day or two it was found that the barographs at other stations exhibited a similar phenomenon. Although the disturbance cannot be compared in any way to the air-wave caused by the Krakatoa eruption, yet the rapidity of its translation proved it to be a noteworthy meteorological phenomenon, and its behavior over central Europe is discussed in an article contributed to the *Annalen der Hydrographie und maritimen Meteorologie* for June, by Dr. E. Herrmann of the Deutsche Seewarte. The disturbance is traced from Keitum (latitude 54° 54′), where it occurred at 7h. 50 m. P.M., Berlin time, on Jan. 31, to Pola (latitude 49° 42′), which it reached at 4h. 38m. A.M. on Feb. 1, having travelled at the rate of about 71 miles per hour. In an easterly and westerly direction the disturbance seems to have been confined to narrow limits. The barometer was high over southern Europe (30.5 inches), with minima (28.7 inches) over northern Finland, and between Iceland and Norway. There was no earthquake in Europe at the time, and the cause of the phenomenon remains at present unexplained.

— During the year 1886 the masonry and iron-work of the Madrid and Baudin bridges at Paris, says *Engineering*, were thoroughly cleansed by the process of M. de Liebhaber. These processes, chemical in their nature, were at first applied to the cleaning of limestones, but in these bridges materials of a different nature were dealt with. The surfaces to be cleansed are submitted to the action of a jet of mixed (dilute) hydrochloric and sulphuric acids, and left for two or three hours, when they are brushed, and finally washed with a water-jet. In the case of limestone, the hydrochloric acid unites with the calcium, forming chloride of lime, which is then decomposed by the sulphuric acid, forming a calcium sulphate; this being precipitated on the face of the stone, and containing all the impurities, which are then removed by the action of the brush and water-jet. In many cases this treatment will not succeed unless the stone is previously prepared, as the masonry becomes coated with a deposit of impurities contained in the atmosphere, which prevents the acids reaching the stones. In this case, before applying the acids, the stone is covered with a paste, consisting of a mixture of carbonate of soda and calcium hydrate, which is called "tolugene." It is spread over the masonry to a thickness of from one-half of a millimetre to one millimetre, and left there for from three-quarters of an hour to an hour, when the excess is washed down and brushed off, and the acids applied as described. In cleaning iron-work, the "tolugene" alone is used. It is spread over the work either with a trowel or brush, and in the course of an hour or so will have united with all the oil of the paint, leaving the red lead on the work in the form of a powder, which can be easily washed off with a jet of water. In cleansing brick, the work is first painted with a solution of ammonium fluoride, and this immediately afterward is treated with a jet of concentrated sulphuric acid, which liberates hydrofluoric acid; and this attacks the silicates, depriving them of their silica. The whole surface is afterward thoroughly washed with water.

— Reaumur, more than one hundred and fifty years ago, made quite extensive researches on clothes-moths; and, observing that they never attacked the wool and hair on living animals, he inferred that the natural odor of the wool, or of the oily matter in it, was distasteful to them. He therefore rubbed various garments with the wool of fresh pelts, and also wet other garments with the water in which wool had been washed, and found that they were never attacked by moths. He also experimented with tobacco-smoke and the odors of spirits of turpentine, and found that both of these were destructive to the moths; but it was necessary to close the rooms very tightly, and keep the fumes very dense in them for twenty-four hours, to obtain satisfactory results. Mr. C. H. Fernald (Bulletin No. 5 of the Hatch Experiment Station of the Massachusetts Agricultural College) has always found that any material subject to the attacks of moths may be preserved from them if packed away with sprigs of cedar between the folds. The odor of cedar is so disagreeable to them that they will not deposit their eggs where this odor is at all strong. Chests of cedar, or closets finished in the same wood, will protect clothing from moths as long as the odor is strong; but this is lost with age, and then they are no protection. It must be remembered that the odor of cedar, camphor, etc., only prevents the moth from laying her eggs on the fabrics; but if the eggs are laid before the garments are packed away with cedar, etc., the odor will not prevent the hatching of the eggs nor the destructive work of the larvæ afterwards. Clothing may also be protected from moths by packing it in bags made of either stout paper or cotton cloth, if made perfectly tight, but this must be done before the moths appear on the wing in the spring.

— Professor Edward S. Morse of Salem, Mass., has received notice of his election as corresponding member of the Berlin Society of Ethnology, Anthropology, and Archæology, accompanied by the society's diploma.