

The World's Progress

IN THE ARTS, SCIENCES, AND LITERATURE.

CURRENT TOPICS, NOTES AND COMMENTS ON EVENTS OF THE DAY.—INTERESTING SUBJECTS AND NOTABLE THINGS WHICH HAVE OCCURRED DURING THE PAST MONTH.—CONTEMPORANEOUS HISTORY FROM A FAMILIAR POINT OF VIEW.

Additions to our Navy.

It begins to look as if we might ultimately have a navy which would command respect even in Morocco. Two of the additions, designed and contracted for under the administration of Secretary Whitney, are nearly completed. One, the cruiser "Maine," a twin-screw, armored turret vessel, now building in Philadelphia, will carry three guns capable of throwing a shell loaded with two hundred pounds of dynamite a distance of one mile. The main battery will consist of four ten-inch, and six six-inch breech-loading guns, besides the secondary battery of twenty-five guns, and every modern improvement in offensive and defensive armor and equipments. Still more formidable is the new twin-screw, shell gunboat "Yorktown," 230 feet long and of 1,700 tons displacement. She has a powerful and well-arranged armament, consisting of six six-inch breech-loading rifles mounted on central-pivot carriages, and a secondary battery of eight rapid-firing guns and revolving cannon on rail and tripod mounts. She will also have eight torpedo guns. The Yorktown is capable of steaming twelve thousand miles in about sixty-five days, at moderate speed. It is said that this vessel is one of the best types of modern gunboats, and it would probably inspire that stupid Sultan, Muley Hassan, with the required amount of awe and admiration for the warlike powers of our government if he could see her steaming up to the port of Tangiers.

The Boulanger Scare.

The Boulanger movement in Paris is regarded by the European press as an element of war, notwithstanding the fact that the property-holders of France, who are the most influential class, are opposed to war. A great diversity of opinion prevails in Paris as to the ultimate result of General Boulanger's sudden and unexpected popularity. When the city is quiet the alarmists of the press immediately see in this a solemn portent of the seriousness of the situation; and when the conflicting parties, students of the Quartier Latin and Boulangerists, convulse the Boulevards with attempted riots, the excitement immediately communicates itself to the newspaper offices. Meanwhile Boulanger's attitude seems somewhat undecided, and raises a doubt whether, after all, the popular General is the man to take advantage of the current of favor, or whether he is only an animated puppet caught up and borne on the whirlwind of political opinion. In any case, more than a year must pass before he can secure political changes of a nature to advance him beyond his present position of Deputy, for the question of revising the constitution brought up before the Chamber of Deputies is likely to be postponed, for a time at least, in which case his supposed attempt to imitate the policy of Louis Napoleon will be nipped in the bud and a repetition of the *coup d'état* be rendered impossible. Yet even the possibility of such a thing seems absurd; for while some of the Deputies and the partisans of General Boulanger are agitating a demand for the revision of the Constitution, their political war-cry is very indistinct. The situation was much more clearly defined when the question arose of the eligibility of Louis Napoleon for a second term. Neither Boulanger nor his adherents seem to know exactly what they do want. A revision of the Constitution, while it probably is desirable, and was a definite part of the tactics which made Napoleon III. Emperor, will hardly lead to a similar result at the present day without a yet more decisive and able action on the part of the hero of Long-Champs. This no one would be led to expect, and even if he were capable of it the French people are on their guard and the Republican Deputies have already united in defense of existing institutions. A popular vote for President would undoubtedly be an improvement upon the present system of election, but even the framers of the Constitution to suit "a fantastical Utopia" would have to proceed more slowly than the actual time needed to put the proposed changes in operation, in order to discover what the people most need or require; for, to quote one of our own statesmen, "All governments, even the most despotic, depend in a great degree on opinion. In free republics it is most peculiarly the case."

Affairs in Germany.

The attention of all nations is focused upon the sick-room of the new Emperor of Germany, and each day's report of rally or relapse excites world-wide interest. Even as we go to press the imperial sufferer may have passed beyond the trials of life, and

the impending political questions, of which Germany awaits the issue, have become actualities. Unable to utter a word, Emperor Frederick's interviews with Bismarck are still important in their bearing upon affairs of state, and his written messages have all the power of royal utterance. Seldom has history furnished a parallel to this situation of the German Empire, which, while having no lack of rulers, can not yet be sure to whom the reins of Government will eventually be trusted, or to what extent the ideas of the late Emperor William will be carried out. The Crown Prince is not by any means the man of advanced ideas that his father is, yet under the guidance of Bismarck, whose large mind and firm will have so long influenced the welfare of Germany, he will doubtless succeed in maintaining the greatness of United Germany. But the great Chancellor himself was seventy-three years old on April 1, and perhaps may soon have to resign his office; and it is reported that his son, Count Herbert von Bismarck, possesses many of his father's sterling qualities, and is prepared to step into his father's place when the time comes.

To Outsell the "Volunteer."

A model for a yacht has just been completed by Mr. David Lynch, a practical ship-builder of St. John's, New Brunswick, who is confident that the vessel built off its lines will be a worthy competitor for the "America" cup. A number of gentlemen have agreed to furnish the necessary capital to build the yacht. The "Bluenose," as this Canadian craft will be named, will be two feet longer over all than the "Volunteer," and will have a little wider beam and a trifle more draft, and will spread considerably more canvas. Her dimensions will be: Length over all, 107 feet; length on water-line, 86 feet; extreme beam, 23 feet, 4 inches; draft, 10½ feet; displacement, in tons, 105. The "Bluenose" will be a centerboard boat, but will probably not be completed before next fall, so our American yachtsmen need not be afraid of her competition in this year's contest.

Niagara Water Power and Improvements.

Some months ago several gentlemen of Buffalo offered a prize of \$100,000 in money for the best invention or contrivance that would convert the water-course of Niagara River into a practical water-power. Several plans have been offered, but the best one has not yet been selected. One inventor proposes to catch the force of the current on paddles fixed on an endless chain, similar to the "feather" paddles on a steamboat. Another project is to carry the water in subterranean tunnels or conduits, at a distance of about four hundred feet from the shore, a mile and a half down the river, with cross-tunnels and sunken shafts in which turbine wheels, connected with upright belting, will supply continuous and cheap water-power. The financial possibilities of whatever undertaking is decided upon are yet to be carried out, but the promoters of the enterprise expect to be able to furnish the simplest and most abundant water-power in the world. If they succeed, the improvements which are being carried on at Niagara Falls will be needed, for all the attractions of the world-wonder will be none too much to compensate for the factories and foundries which will encompass the locality. The superintendent of the State reservation at Niagara Falls reports many new improvements at the depot of the inclined railway, a new stairway to Luna Island, and the substitution of wire fences for the high board fences which formerly obstructed the view of the river gorge and the Canadian shore. Many other improvements are contemplated, including an elevator at Goat Island, and the planting of trees and shrubbery where buildings have been removed from the reservation, greatly enhancing the view.

The Nicaragua Canal.

Accounts from the Nicaragua Canal expedition report that the Hydrographic Corps have already begun their labors at the west side of Lake Nicaragua. Two routes are suggested from the lake to the sea, on the eastern side, which diverge at a point about twenty-five miles from the lake, one route being through the rock and difficult in its engineering, but seven miles shorter than the easier line which runs below. A thorough exploration to determine the advantages and disadvantages of these two routes will be made. The adventures of that noted explorer, Allan Quartermain, are recalled by some descriptions, reported by correspondents accompanying the expedition, of a tribe of white Indians dwelling at the head-waters of the Rio Frio, and of the sharks which infest the waters of Lake Nicaragua,—a singular fact! This inland lake on the table-land overlooking the Pacific lessens the necessary distance of canal excavation by nearly fifty miles, and it is to be hoped that the sharks will be exterminated or disappear when the canal is completed; but perhaps lake-water sharks are not as voracious as the sea-faring monsters of the same family.

The Grant Memorial.

A circular letter has been sent by the Executive Committee of the Grant Monument Association to all leading architects, sculptors, and designers throughout the country, inviting them to submit plans and proposals for a memorial to General Grant, to be erected at his tomb in Riverside Park. But unfortunately the wording of the circular has created great dissatisfaction, owing to the conditions imposed upon the designers. The clause which has occasioned the refusal of several well-known architects to abandon the competition is thus worded: "The total cost of the

completed structure cannot, at present, be definitely fixed; but as it is hoped that the funds of the Association may be largely increased within the present year, it is suggested that designs be submitted based upon an estimated expenditure of \$500,000. Should a larger sum be hereafter contributed, the surplus may be expended in additional ornamentation and decoration, and suggestions embodying such a possibility should accompany the designs."

Anyone with no knowledge of architecture whatever will at once perceive that this condition is paralyzing to effort. Suppose a lady should send an order to the great man-milliner, Worth, with the instructions that the costume she wished him to design and make should cost \$500, but that he must make it so that in case she succeeded in coaxing her papa or husband into giving her \$200 more, the dress could be correspondingly enriched. What dressmaker would undertake to design a costume upon such an agreement? No suitable monument could be designed upon the possibility of extra appropriations, for what architect could plan an impressive monument whose simplicity and grandeur should properly honor the nature of the hero it commemorates, and leave room for additional ornamentation to be put on at pleasure? A revision of the circular is hoped for, otherwise the competition will be exceedingly limited, also the chances of obtaining a symmetrical design.

Type-writer or Typograph.

It was announced the other day that a certain gentleman had married his type-writer,—meaning, of course, not that wonderful invention, the type-writing machine, but the charming young lady who operates the same. This confusion of terms has led to the suggestion that a new word be "coined" to designate the type-writer,—the machine, not the girl,—and from Greek derivatives the word "typograph" has been evolved, and also a sister-word, "typoscript," meaning "copy" produced by the type-writer, in contradistinction to manuscript, or that written by hand. These two new words are wholly unobjectionable, being properly compounded; and if they become generally adopted much unnecessary confusion in the vocabulary of those who talk about type-writers will be obviated. The ladies whose occupation causes them to be known as type-writers will then enjoy a full monopoly of the title, and the machine will have its proper termination and be designated as the typograph.

Our Wheat Crop.

The extraordinary weather of last March, following a winter more open and changeable than usual, did not augur well for a full crop of wheat. The Department of Agriculture reports the loss of 40,000,000 bushels, or more, from a full crop, so that if last year's supply were exhausted, consumers might find the price of flour considerably higher. However, thanks to the speculators, last year's supply of wheat is not yet exhausted; and it is estimated that from 35,000,000 to 40,000,000 bushels have been carried over, so that unless the damage to wheat is much greater than the Department reports, there will undoubtedly be opportunity for larger exports than those of last year. The loss of 40,000,000 bushels will cut down the supply available for export to 18,000,000 if the usual average yield of wheat—about 463,000,000 bushels—should come in, allowing 463,000,000 for home consumption.

A Prophecy of Prohibition.

In tearing down an old building in McKeesport, Pennsylvania, some workmen discovered in the chimney a pint flask of whisky, and a tin box containing a prophecy written in 1838. This singular writing was a prediction that in thirty-five years (in 1873) slavery would have ceased to exist. The writer added, "Men will communicate from beach to beach of ocean easier than indite a letter. The tallow-candle of to-day will not even be used to grease the boots. Men will touch the wall as Moses touched the rock for water, and light will dispel the darkness. Prohibition will be a battle-cry, with temperance a formidable enemy. The flask of spirits which I place herewith will rise in the midst of a conflict which will claim it as one of the principals."

Color-Blindness.

An article in "The Medical Press" advances the idea that the particular defect which gives rise to color-blindness lies not in the eye itself, but in the brain. Certain persons cannot distinguish between two musical tones; yet, as they hear both, the defect is not deafness, or any fault of hearing. Professor Ramsay, the advocate of the idea, therefore argues that in people who have no musical "ear," the brain is at fault, and assumes that it may be equally true that the inability to perceive certain colors is not due to any defect of sight, but to the mental lack of power in interpreting the impressions conveyed to the brain by the optic nerve. If this be true, the question of color-blindness ceases to be a physical problem, and may be classed among cases for the mental physiologist to deal with.

The Discovery of Latin America.

The Queen Regent of Spain has issued a decree in which is stated a plan for the celebration for the fourth centennial of the discovery of America. This commemoration is to take place in 1892, and the ruler of Spain intends to invite only "the Kingdom of Portugal and the Governments of the Nations of Latin America" to honor the memory of Christopher Columbus. But the

United States and British America are not invited to share in this glorification, and Miss Columbia must sit at home like a nineteenth century Cinderella, while her step-sisters go to the exhibition. But why is she left out? This Spanish exclusiveness would deprive the great discoverer of a considerable share of his glory, for surely the development and growth of the United States and British America are due to him no less than those of the Spanish-American Republics. No celebration of the discovery of America can be at all commensurate with the importance of the event, which is restricted, as this exhibition will be, to the exposition of the culture of the nations of Latin America.

Railroad in Palestine.

The shrill scream of the steam-whistle has until now never profaned the sacred echoes of the Holy Land, and the idyllic silences of its hills and valleys have remained unbroken. But this will soon all be changed. Railroads, stations, and telegraph-lines are about to be introduced in Palestine, and the familiar name "Bethlehem" will soon be intoned in some strange and unintelligible transposition, by the accommodating railway guard, in the ear of the inattentive passenger. A railroad will soon be built between Jerusalem and Jaffa. The banking-house of J. Frutiger, in Jerusalem, is chiefly concerned in the enterprise, which is also favored by the Rothschild house in Paris.

Rough on Rabbits.

The Government of New South Wales has offered a prize of \$125,000 to any one who will deliver the sheep farmers of Australia from the pest of rabbits, introduced there by English colonists. The noted French pathologist, M. Pasteur, has proposed a scheme for exterminating the rabbits, which is certainly novel, at least. The means he proposes is inoculation with chicken-cholera, which the scientist professes is fatal only to rabbits and birds, while it has no effect on sheep, dogs, or horses. The grass will be mowed over an extended area, and then the rabbits will be fed with chicken-cholera salad of green herbs, with microbe sauce, which delicacy will undoubtedly be effectively fatal. Two of M. Pasteur's assistants have started for Australia to thus exterminate the pests, which burrow in millions and render the cultivation of land impossible. The prize, however, will not be awarded until the method has been tested for a year, and been proved harmless to man and farm-stock. M. Pasteur's recent failure in curing hydrophobia does not necessarily argue failure in this experiment, for he has been very successful in remedying silk-worm and cattle diseases. Besides, hydrophobia is a less extended evil, although more difficult to operate upon than this extraordinary multiplication of Australian rabbits.

To Bridge the English Channel.

Besides the long-mooted project of a submarine tunnel between France and England, which has been postponed to an indefinite future, there has been for several years a scheme agitated for bridging the channel between France and England by a structure of fabulous extent. This proposed railway bridge will begin at Cape Gris-nez, near Calais, and end at Folkestone. It will be nearly twenty-five miles long, and rest on seventy piers with light-house towers. Four railway tracks will be laid on this bridge at a height of fifteen hundred feet above the sea level, which will thus give direct railway communication between England and the Continent, and the dreaded channel passage, which is the bugbear of sensitive travelers, will be a thing of the past. The cost of this gigantic piece of engineering, which, when completed, will be without precedent or parallel, will exceed a million of francs.

The Receding Shores of France.

Europe has lost considerably in area since the tertiary period. The North Sea was formerly little more than an arm of the English Channel, so that the continent at that time extended over the archipelago and islands to Greenland, and was probably connected with North America. The influx of the ocean which separates the British Isles from the continent is, geologically speaking, of recent occurrence, apparently about the latter part of the tertiary period, and the gradual destruction of the coast dates from that time. Cape Gris-nez, that point of the French coast which is nearest England, has receded some seventy-five feet in the last century, which would seem to indicate that about 60,000 years ago an isthmus might have connected France and England. Perhaps some enterprising De Lesseps of the tertiary period cut a canal through and thus made a passage for those turbulent waters, which now are the terror of qualmish tourists. Not only the disappearance of the land passage between England and the continent is to be regretted, but the sinking of the soil on the French coast, which is increasing the distance and reducing the territory of the "charming land of France," so that Paris may ultimately become a maritime city. A recent discovery on the coast of Brittany discloses, beneath a mass of sand, a buried forest opposite Saint Malo, and French geologists estimate that the gradual sinking of the soil of Brittany, Normandy, Artois, Belgium, and Holland, is not less than seven feet a century. At this rate it will only take about a score of centuries to submerge Paris, and the bells of Notre Dame will perhaps sound from the waters like the church bells of the sunken city of Is, which the peasants of Brittany declare may still be heard chiming beneath the waves with the motion of the current.

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The Presidential Candidates.

The nominations of the Chicago Convention, while not surprising, were hardly to be expected, yet did not elicit the thunders of applause which welcomed the second nomination of President Cleveland at St. Louis, two weeks before. But although the nominations of Benjamin Harrison, of Indiana, for President, and Levi P. Morton, of New York, for Vice-President, were received somewhat quietly, they appear to be none the less satisfactory to the Republicans. Benjamin Harrison had the good fortune to be born in Ohio, and was just seven years old forty-eight years ago when the "log-cabin" campaigners were shouting themselves hoarse for "Tippecanoe and Tyler too!" and his grandfather, William Henry Harrison, was elected President. Mr. Levi P. Morton, who was unanimously nominated for Vice-President, was born in Shoreham, Vermont, in 1824. He has long been known as the leading partner of the banking-houses of Morton, Bliss & Co., New York, and Morton, Rose & Co., London, and first entered political life in 1876. As Minister to France under Garfield's administration, Mr. Morton accomplished much for the commercial relations between France and the United States. The past four years and its Administration have put the Democratic nominee, Mr. Cleveland, before the people in a way to need no introduction. The "noblest Roman of them all," Allen G. Thurman, is the Democratic choice for Vice-President. The Prohibitionists have nominated General Clinton B. Fisk, of New Jersey, for President, and Dr. John A. Brooks, of Kansas City, for Vice-President. Now we are all ready to begin. Campaign songs, complimentary epithets, medals, badges, and transparencies will fill the horizon for months to come.

William II.

The new Emperor of Germany succeeds two sovereigns each famed in arms and valor, yet who did not seek in war a path to glory, but an establishment of permanent conditions. On the fifteenth of June, Frederick III., the Emperor of Germany, the idolized "Unser Fritz" (Our Fritz) of the German army, passed away, after a reign of but three months. His father, William I., died on March 9th, and he, the only son and successor, returned to Berlin from San Remo, where he had been seeking relief in the mild air for his throat trouble, and was crowned emperor. The imperial status for life of his wife, Victoria, daughter of the Queen of England, was thus secured, which had he never been emperor might have been endangered. The soldier-prince who now assumes the imperial crown, was born on the 27th of January, 1859, and consequently may expect a long reign. In the May number of this Magazine will be found some notes of his life, included in a sketch of his grandfather, the late Emperor William, with portraits of the two recently deceased emperors and also a portrait of the present Emperor, then Crown-Prince, with that of his eldest son. It is seldom that a nation loses two such rulers in the short space of three months, in times of peace, yet the real guardian of Germany's fortunes still lives. Prince Bismarck's authority remains unchallenged, for Emperor William II. is in full accord with the Chancellor's ideas in home and foreign policy, and will probably be guided by him for some time yet.

The Lick Observatory Telescope.

The great telescope of the Lick Observatory of the University of California is now, so far as the work of the builder is concerned, practically completed. The adjustment of all the complicated details by the astronomers who are to use the instrument, will doubtless take some weeks, if not months. The telescope, as it now stands in the dome of the observatory, rests on a pier which is a rectangular cast-iron column, weighing twenty tons, built up of four sections rigidly bolted together. The iron is about an inch and a quarter thick. The lower section, which at the floor level is nine by five feet, expands into a broad base sixteen feet long and ten feet wide, resting upon the solid masonry foundation which forms the tomb of James Lick. On top of the pier is a balcony, surrounding the massive head-piece which forms the support for the polar axis. The upper section of the pier, four by eight feet at the top, contains the driving clock. A light iron spiral staircase, running from the base of the pier on the south

to the balcony, gives access to the clock room and machinery above, and adds greatly to the appearance of the mounting.

The telescope is intended to be moved by an assistant stationed on the balcony which surrounds the top of the pier. The steel dome, seventy-five feet four inches in diameter, is rotated by an endless wire rope which passes around the circumference of the dome, over guiding pulleys and around a grooved wheel turned by a hydraulic motor in the basement. The dome can be turned completely around in nine minutes. The elevating floor is operated by hydraulic motors also. The interior of the dome is beautiful and impressive, and even those who have no just appreciation of the grandeur of its purpose, become thoughtful in the presence of the great telescope. The equipment of the Lick Observatory is most encouraging to the hopes of all astronomers and the few observations which have been taken promise success. The site, Mount Hamilton (4,302 feet high), is surrounded by a limpid, equable, and constant atmosphere, most favorable for observations of the heavens. The trustees are entitled to the fullest credit for the manner in which they have carried out the work to its undoubted fulfillment of the imposed conditions of Mr. James Lick, in his trust deed. This appropriated the sum of \$700,000 to the establishment of an observatory which was to contain "a powerful telescope, superior to and more powerful than any telescope ever yet made."

Electric Light in Surgery.

Electricity is now employed to throw light on medical investigations. Sir Morell Mackenzie used a little "pea-light" attached to the end of a slender rod, to examine the throat of the late German Emperor. The little battery that supplies the electricity hangs around the surgeon's neck. By the aid of these little electric lights, the manipulations of the surgeon can be much more accurately conducted, and results altogether impossible when guided by the sense of touch only, become comparatively easy to achieve.

Execution by Electricity.

The Governor of New York has signed a bill providing for the execution of criminals by electricity, so that in future the condemned in New York State will be spared the shame of the hangman's noose, and death will be as painless and instantaneous as by the lightning-stroke. A fear has been expressed lest execution in this way should not always prove effectual, and the subject be only stunned instead of being killed outright; in which case there might be danger of ante-mortem burial. This matter will be looked into, and it will doubtless be an easy thing to supply a sufficiently strong current to render execution not only sudden but sure. The bill provides also that the hour of execution shall not be made public until after the event, so that much of the morbid sentiment which attends the execution and funeral observances of those condemned to death, will be done away with.

Emancipation in Brazil.

The Brazilian Parliament has approved the Government bill completely abolishing slavery, and it has been sanctioned by the Regent, the Princess Imperial, Isabella. The decrees liberating every remaining slave meet with general approval North and South; and when the poet Whittier heard of it, he sent the following dispatch to the Emperor Dom Pedro, at Milan: "With thanks to God, who has blessed your generous efforts, I congratulate you on the peaceful abolition of slavery in Brazil. JOHN G. WHITTIER." The Emperor, who is personally acquainted with the poet, caused a reply of thanks to be cabled. Viscomte Nivaca, who is in attendance on Dom Pedro, sent the dispatch, also alluding to the critical state of the Emperor's health. The era of emancipation is one of promise for all classes in Brazil, and it is certainly a splendid result which secures absolute freedom to the slaves without sectional war, and without entailing great loss upon the agricultural classes.

The Emperor of Central Asia.

A report is in circulation that the Czar of Russia is about to be crowned Emperor of Central Asia, at Samarcand, that mysterious and ancient city of the "thousand and one nights." Russian rule, regarded among Western nations as the most despotic and semi-barbarous system of government in the world, is considered on the eastern side of the Ural range a blessing to the unenlightened people of the straggling series of oases and towns separated by wide expanses of desert. Free trade is the policy of Russia in Asia, although in Europe she clings to protection. The completion of the trans-Caspian railway to Samarcand will inaugurate a new era in Asia, and before the locomotive headlight the lingering shades of ignorance and superstitions of the dark ages will vanish. The building of this line makes us think of the favorite idea of Peter the Great, which was to secure forever commercial intercourse between Russia and Central Asia, and thus open a wide market for Russian industries. Before the building of this railroad, the merchant caravans took about six months to go from Bokhara to Orenboorg, while now it takes only fifteen days to transport the chief products of Bokhara, silk goods and cotton, from Tchaordjai at Amoo-Darya, to Moscow. The trans-Caspian railway is of the greatest importance to the cultivators of cotton in Asia, and not less so to Russian manufacturers, who now must get all their cotton from England and

America, while from one colony alone in Central Asia, there is a yearly product of from two hundred and fifty to three hundred million pounds, at the least a value of some thirty-five or forty million dollars. The soil and climate of the oases at Murghab and Tedzen, as well as at the Khanat of Bokhara, are highly favorable to the cultivation of cotton. As for the rolling-stock of the railroad, it has of late been much exaggerated in various European journals. The carriages are naturally built as airy as possible for the climate of Central Asia, and each passenger-train has a saloon car with kitchen and buffet, for there are very few stopping-places crossing the desert. There are no special harem carriages for ladies, but they are hardly necessary, for the "true believers" will not permit their wives to travel on a railroad. The "ship of the desert," vulgate, "camel," serves the Nomad families, and long journeys do not occur in the life of a noble Mahomedan lady, and Russian ladies will not care to travel so far to see so little; for Merv and Ashabad are little boundary cities, which only owe their existence to the Russian troops garrisoned there. However, the inhabitants who until lately never went out of their plaster huts unless armed to the teeth, now devote themselves more and more to commerce and agriculture; the Turcoman children are taught by the Russian establishment in elementary schools; and order, work, and prosperity have taken the place of rapine, slavery, and recklessness. No wonder the "White Czar" is revered by the Central Asiatics. If the Chinese markets can now be opened to Russian traders, Asian commerce and industry will be still more benefited.

Paper Bottles.

The ingenious uses to which paper is put, in the manufacture of boxes, basins, pails, barrels, and car-wheels, are well-known; but the manufacture of paper bottles is a novelty in the evolution of this industry. They are made of glued sheets of paper rolled into long cylinders, which are cut into suitable lengths, tops and bottoms are fitted in, and the inside coated with a water-proof compound,—all done by machinery more rapidly than one can tell of it. As these paper bottles are cheaper and lighter than glass, and unbreakable, consequently requiring no packing material, they are likely to become very popular with consumers; and they are already quite extensively used for ink, bluing, shoe-dressing, glue, etc.

Pouring Oil on Troubled Waters.

The use of oil as a pacifier of the angry waves is commonly believed to be more poetical than practical. The pilot chart of the North-Atlantic Ocean for last month reports, however, three examples of how oil was used successfully for this purpose in the terrible gales of the vernal equinox. In each case, the oil was put in perforated bags and hung over the weather-bows of the vessel. The waves dashed madly toward the vessel, but meeting a patch of floating oil, their crests would quiet down and they would roll harmlessly past. Different kinds of oil were used, but mineral sperm, a soft, greasy oil, is considered the best. The captain of the New York pilot-boat *Caprice*, thinks that the use of oil in this way saved his vessel. The schooner-yacht *Iroquois* also used about fifteen gallons of oil in thirty-six hours, to calm the sea which the terrific gale of March was lashing to fury. The idea is not a new one, but its practical application has not until lately been believed to be of actual value. If the sea will succumb like this to the soothing influence of oil, perhaps the Standard Oil Company will find a new field for its pipe-lines, and for a consideration will guarantee to keep the ocean lanes in good traveling condition for our trans-Atlantic passenger steamers.

Algerian Crickets.

Last year Algiers was devastated by swarms of grasshoppers, but this year a plague of crickets is ravaging the province of Constantine. These crickets are reported to be advancing in a compact mass over twelve miles long by six in breadth, forming clouds which shut out the light of the sun, and when they alight on the ground they destroy every trace of vegetation. The railway trains between Constantine and Batna have been stopped by the insects. The Algerian authorities have spent an almost incredible sum in destroying them by the old and expensive method employed by the African possessions of France. Long trenches are dug at a right angle to the advancing swarms, and on the farthest side is a sort of fence made of a web of cloth. The insects strike against the cloth, fall into the trench, and then are covered with lime or mold.

Methodist Nuns.

The Methodist General Conference has created an order of deaconesses after a careful consideration of the subject by the committee on missions. There is Scriptural precedent for the proceeding, and it is said that the idea is due to an ex-Catholic priest who had become a Methodist. These deaconesses will be very similar to the nuns of the Roman Catholic Church, except that they are not to take vows of life service or of celibacy; they will minister to the poor and the sick, care for orphans, and do other work of charity. They will be required to serve a probation of continual service for two years before being made deaconesses, and they will have to be at least twenty-five years old. Dr. Morgan Dix, of Trinity Protestant Episcopal Church, New York City, succeeded several years ago in forming a sisterhood of deaconesses, but they have not been formally indorsed by the

denomination; so that the Methodist Church is really the first Protestant church in America to attempt the recruiting and uniforming of a religious sisterhood. What the distinctive costume will be is yet undecided. Naturally it will be something of a subdued character, but how much of a disfigurement to personal beauty is not yet evident.

Mummy Frauds.

When you wish to invest in mummies, don't choose a "well-preserved" one, but a dried-up, "used-up"-looking specimen, if you want a real bona-fide mummy; for it is said that there is a great deal of fraud in the mummy business in Egypt. Knowing that purchasers will pay more for well-preserved mummies, and as no genuine mummies are well preserved, the dealers contract with beggars and tramps for their bodies when defunct. The prospective mummies spend in riotous living the money advanced, which soon winds up their active career. Then they are smoked and pickled and otherwise treated until they are thoroughly "mummified," pedigrees dating back to the days of Sesostris are attached to them, and they find ready purchasers among the rich "Christian dogs," who never question the genuineness of such an antique as a mummy.

A Floating Sawmill.

Much of the finest timber in the South grows along the bayous and lagoons of Florida, in places considered entirely inaccessible until the idea of a floating sawmill was conceived. This idea was carried into execution, and a mammoth mill which will float in the shallowest water, was constructed for a large lumber firm. This floating mill is a marvel of mechanical ingenuity. It is eighty feet long and forty broad, and is so solidly built that the motion of the machinery has no more effect upon it than if it were built on land. It stands five feet high above the water, but its draught is only about a foot and a half, which permits it to be taken into the shallowest lagoons, where timber could not be floated. It is furnished with the latest machinery and a fine forty-horse power engine. There is a hurricane deck with office and cabin for the proprietor, while the men's quarters are on the main deck, and the machinery below. The success of this mill has been so great that it is very likely the pioneer of other craft of like nature.

A Singular Sun-Clock.

A curious combination of sunlight and electricity has been applied to a clock by a prominent watch-maker in Rio Janeiro. This solar clock would be a practical solution of the problem of perpetual motion if the sun only shone in one place perpetually. There is an electric bell apparatus in the upper story of the house, and the two wires from the battery are each furnished with a thin, flat, horizontal piece of metal, which are placed a small fraction of an inch apart. Just above the flat pieces of metal a bi-convex lens concentrates the rays of the sun upon them at a certain moment—noon, for instance; the action of the sun's rays heats and bends the metal pieces till they touch and close the electric circuit, which rings the bell. The sun also winds up the clock downstairs at the same time. The barrel arbor carries a click and a ratchet which is wound up by the hammer of the electric bell as it moves backward and forward, striking the hour. But this is not all, for the sun regulates the clock; the canon carries a washer, which is set in motion by a magnet, and at noon turns so as to bring the minute hand on the figure XII.

How Much the Earth Weighs.

By a computation of the weight of the earth by its diameter and the ascertained estimate that the earth is $5\frac{1}{2}\%$ heavier than a sphere of water of the same size, and that a cubic meter of water weighs twenty hundred-weight, we arrive at the following results: The circumference of the earth is 40,000,000 meters, and the diameter, less fractions, 12,738,853 meters; and according to the formula $\frac{D^3\pi}{6}$ or $\frac{12,738,853^3 \cdot 3.14}{6}$ the cubic contents = 1,081,855,795,637,421,051,023 cubic meters, the number of cubic meters multiplied by $5\frac{1}{2}\%$ will give the weight of the earth = 122,610,323,505,574,385,782,607 hundred-weight. In words: One hundred and twenty-two sextillion, six hundred and ten quintillion, three hundred and twenty-three quadrillion, five hundred and five trillion, five hundred and seventy-four billion, three hundred and eighty-five million, seven hundred and eighty-two thousand, six hundred and seven hundred-weight. If you do not believe this, weigh it yourself!

American and English Ships.

Great Britain is the greatest maritime nation in the world according to the latest reports. The total tonnage was 6,336,000 in 1877, and in 1886 was 7,321,000 tons; the steam tonnage alone had risen from 2,000,000 tons to 3,969,000 tons. These years were years of depression, and during them the total tonnage entering and clearing at the ports of the kingdom rose from 49,500,000 tons to 53,750,000. Of the whole amount 75 per cent. was British. The country which approaches nearest in shipping is the United States, but all of this is done in foreign ships. We have no merchant marine, and Americans are compelled to depend upon other nationalities to carry their productions. This should not be. There was a time when we had a merchant marine; but to-day, what ships we have are not seaworthy.