THE FASHIONS.

SPRING IMPORTATIONS.

DRESS FABRICS—SILKS, WOOLLENS, GRENADINES, COTTONS—NEW COLORS—COSTUMES—PASSION FOR EMBROIDERY—LINGERIE.

The shop windows are now hung with exquisite fabrics, airy and fine as Titonia's robe, dainty as fern or frond of palm and sea-weed. There is no discord between the charming tones of color—the sea foam of green, the pale wild rose, the light blue of the sky and clear ivory tints of soft Summer silks and ribbons, the haze of the brightest hues of flossy silks on black satin. Among the newest fabrics displayed to be worn when Summer days are long, are cotton goods of the quaintest styles called mummy cloth, heretofore used only for ladies and rugs. The colors are extremely delicate and faded, as a pale blue with a bronze stripe, again a stripe formed altogether of clusters of *fade* pink flowers and olive foliage. Yet another style has a stripe of ecru and sprays of pale lavender blossoms, and there are others of faint olive grounds with wandering May flowers and apple blossoms. These faded tints are guaranteed to fade no more, and mummy cloth short dresses, fascinating through their novelty, will have a popular Summer existence. It is one yard wide, and fourteen yards are necessary for a short dress. Other new cotton goods are pretty armures with white and creamy grounds; over these carelessly stray rose-vines, pale violets, or a bunch of forget-me-nots. Côteline is also new, woven in a lengthwise cord or reps, thinner than calico, with a ground of cream, white, or pale olive, strewn with little Dolly Varden bouquets of bright blossoms, or stripes of dragon blue contrasted with a faint bronze green. Satteens and foulard cambrics show dainty chintz designs.

The fashionable zephyr ginghams are revived from last year in very much the same marked checks and plaids of red, black and white, pink and blue, and red and brown barred with salmon. Accompanying these fabrics is a Russian braid lace for trimming. A quaint caprice of last season introduced the brilliant-hued bandana handkerchiefs into costumes. As a consequence of this fashionable eccentricity percales are now manufactured in close imitation of the bandanas. They are shown in all of the many shades of brown, with patterns of stars, polka spots, sprays, diamonds, arabesques, oval and diagonal blocks. A delicate ivory-hued ground will be very popular with wine colored or dark blue spots.

French and Japan foulards are very extensively imported. The grace of foulard makes it very dear to the hearts of French women, and the new importations show a charming lustre and beauty in design. Here again the chintz figures announce a revival of piquant, and bright Dolly Varden toned down Upon a pearly ground are little clusters of roses and a spray of clematis. A cream-colored ground is strewn with fern fronds and scarlet anemone, and upon a black ground are scattered violets and roses, or little carnations and grasses. These beautiful foulards are twenty-three inches wide and cost $1 a yard. Another new style of foulard has a lustrous satin ground covered with silk figures in relief of Oriental designs in palms and alianthas and arabesques. These are in solid colors. Another style shows floral designs covering the satin ground of carnations, branching foliage and wheat ears. A new crape finished foulard comes in sage, olive, wood and bronze grounds, over which drift vines, leaves and blossoms in silk effects. Others in the same style come in claret-red shades, ashes-of-roses, shades of brown and prune. These cost $1 20 a yard. Cashmere faconné is a satin-finished, exquisitely fine cashmere, covered with satin floral designs; it costs $1 50 a yard. The evening tints of this fabric are delicate cream-color, pearl, flesh-color, blue rot, and pale woody tints. The new armure silky stuffs of softest fabric are shown in plain and mixed shades, both in blues and browns. Pongees of purest silk have hair lines half an inch apart of variegated colors on grounds of pale amber, mastic, wax white (a pale straw color) and pearl.

Of the new Spring and Summer silks there are an infinite variety, and a departure from the usual delicate shades by the introduction of maroon and other rich wine colors, as well as Chinese green, Sevres blue and dark blue; broken lines of white are scattered over these dark grounds. The prices range from 85 cents to $1. Lou sine silks reappear with brighter tints, and have this season gay satin stripes, alternating with little clusters of roses and violets; these are $1 25 a yard, and are used for overdresses. It is evident that stripes are very fashionable. The newly imported grenadines are exceedingly handsome, one style having a wide satin stripe blocked with velvet, alternating with a lace stripe; it costs $3 a yard. Other styles have alternate stripes of satin and lace, lace and watered silk, lace and rich brocade, and lace alternating with a stripe of satin and one of watered silk; this is $2 50 a yard. A lace armure stripe and satin striped grenadine is covered with vines and flowers of satin, and costs $1 25.

Among the novelties in woollen fabrics are the camel's hair Chuddahs, costing from $2 to $4 a yard, and Chuddah effects are seen in many of the other fabrics in close imitation of real India Chuddahs. Some of the new fine soft woollens, have watered stripes in such shades as blue Rot, sapphire blue, beige shades, and more delicate cream-color. Beige de saute is a fine flamed finished material for travelling Summer costumes, of the same weight but nicer than bunting of similar width; it costs 60 cents a yard. Bunnings come again freshened and finer than those of last season, and the always popular de beges are shown in soft, fine qualities, and pretty, delicate shades for 50 cents a yard.

The new Spring costumes seem all prepared on lay figures are made short, with a long, closely fitting basque and trimmed skirt, or with a Louis Quatorze basque, having a diminutive vest. The drapery or curtain overskirt belongs to this costume, and where economy is desired this overskirt is so arranged that simply the lower front of the underskirt need be made visible. A coat, basque and separate waistcoat will also be fashionable; yet another style shows a princesse back and basque, and overskirt front. The Directoire jacket is one of the most *distinct* of the new shapes, being a modification of this style worn during the last century. It is very much cut away, showing the vest above and below the waist. Vests are decidedly a prominent feature of all manner of costumes. Black satin vests are exquisitely embroidered with shaded silks, in which is represented the finest work in vines, garland and small flowers; others are marvellously done, showing blades of the palm, blossoms of the lotus fantastically twined with buds, leaves and curling tendrils. With the passion for dress decoration and embroidery, the skill of the artist is taxed to the utmost to produce fresher and more graceful patterns and people are no longer dependent upon foreign hands for the finest and most elaborate work of France, for it can now be done to order at home. Large mercers the houses, other waistcoats of soft India cashmere and pearl-colored silk are exquisitely embroidered in colored silks, closely imitating the palms of India shawls, bright garlands of Autumnal leaves, shaded green vines of cypress and drooping fronds of ferns, purple pansies and lily-cups. Still more costly are the hand-painted bands on silk velvet and satin, showing the highest order of artistic beauty. Some of the lamas of black satin glow with unseen scarlet cacti and other flowers of the tropics, with here and there a brilliant humming bird and gorgeous butterfly. Other bands of white silk show waving rushes and marsh lilies, grasses and dragon flies. Magnificent silks are pointed in beautiful designs of flowers.

Among new accessories to the toilette in lingerie are some charming waistcoats of soft, white linen cambric, beautifully embroidered and edged with Breton lace, while others, also embroidered, are made of fine white linen. The new ruffs and cuffs are very wide and very full, of Breton lace plaited in close shell patterns. The wrist ruffles are mounted on bands of plain swiss muslin. Nothing in past fashions can exceed the beauty and elaborate finish of fichus, collarettes and neckerchiefs of the latest importation. A fichu of palest blue crepe de chene is edged with Breton lace, sewed on with blue floss silk in cross-stitch on the upper hem; the lower edge is finished with fluffy fly fringe of pink, blue and white silk. An ecru crepe de chene fichu is beautifully embroidered with a wreath or garland of shaded rosebuds and forget-me-nots. This is finished with a crimped edging of Breton lace and has a frilled floss fringe combining the colors of the embroidery. A necktie of delicate blue India muslin, very soft and fine, is trimmed with bands, set on, of crepe lisse, embroidered with bright carnations and shaded leaves. A jabot of Breton lace is decorated at intervals with rosettes made of skeins of sewing-silk in pink and blue. Similar rosettes, presenting a charming effect, are made for the hair in cream-color and pink, finished with a bow of satin ribbon and little plaiting of Breton lace. Some of the double neckerchiefs are caught carelessly at the left side, and festooned with a dropping spray of carnations or violets. Pretty ties of soft, creamy white grenadine are finished with a long cascade of Breton lace caught at the end in an Etruscan gold ring. The new designs of Breton laces show scolloped and pointed edges, and cost from $1 50 to $2 25 a yard. The imitation is exceedingly good, and costs 30 and 50 cents a yard.

Messrs. A. T. Stewart & Co., Arnold, Constable & Co., Evans, Peake & Co., and Mme. Demorest will please accept thanks for attention.

LITERARY NOTES.

Colonel T. W. Higginson's "Young Folks' History of the United States" has been translated into three foreign languages, and is now printing in raised letters for the blind.

Still another novel from Henri Gréville, says a letter from Paris. "Bonne Marie" is its title, and its translation into English for American publication is already in progress. Mme. Gréville's former works are now being translated into German and Italian.

Five important works relating to Bismarck are now in print in Germany, only one of which has as yet found its way to America. This is the Bismarck letters published a few months ago by Charles Scribner's Sons. The others, besides Dr. Busch's book which will be here soon, are "Prince Bismarck: a Biographical Portrait," by Ernst Pflug; "The Book of Prince Bismarck," by George Hesekiel, and "Prince Bismarck: His Political Life, from Public Documents, His own Utterances," etc., by Ludwig Hahn.

A curious coincidence in the respective judgments passed upon Madame de Staël by Schiller, a German poet, and Byron, a British lord, is noted by *The Athenæum*. Schiller wrote to Goethe: "She is all of a piece. There is no odd, false and pathological feature in her character. The intellectual culture of the French has in her a pure and exceedingly interesting representative. For what we call poetry she has no appreciation." And he added: "The only tiresome thing about her is the extraordinary volubility of her tongue: one has to transform oneself into an organ for hearing in order to be able to follow her." Eleven years later Byron wrote to Murray: "I do not love Madame de Staël, but depend upon it she beats all your natives as an authoress, in my opinion, and I would not say this if I could help it." On another occasion he said: "Mrs. Corinne always lingers so long after dinner that we wish her in the drawing-room."

The letters of Delacroix, just published in Paris, are said to be very agreeable reading. They show that what was thought to be violent, exaggerated and odd in his work as an artist did not proceed from a wish to astonish the public. He sought a more and more intense life and his ideal being often caught sight of but never attained did not appear to the common observer for what it really was. These letters show that his mind was well-balanced, simple and strong, and that his understanding was clear. He was not only an artist, but a thinker as well, while as an art critic he was gifted and possessed a taste at once delicate and wide. Besides these he possessed, says *The Academy*, in his earlier years, "bursts of free and spontaneous gayety, tender and enthusiastic friendships, and lastly, especially as years went on, that feeling of the sadness of life and human affairs found in all those who have taken destiny seriously."

Lord Campbell is reported once to have proposed that "any autnor who published a book without an index should be deprived of the benefit of the copyright act," and Carlyle expressed his views on the subject long ago, as what searcher for facts in books has not? Of all books German have perhaps the fewest indexes. Dr. Busch's "Bismarck" had none, and this book needed one all the more because it is made up of detached pieces which sometimes are mere broken utterances of Bismarck's. Macmillan & Co. have no index in their English edition, and the wish has been often expressed in England that their second edition, now in preparation, may be provided with one. In referring to the criticism that these volumes have been overrated, *The Athenæum* remarks that this is true in the sense that, as a literary performance, "they do not stand high, being scrappy and disjointed to an extraordinary degree." On the other hand it regards their importance to historical students, and to all who care "for an insight into the inner complications of one of the most marvellous periods of modern history, and for a comprehension of the wonderful man figuring in the centre of it" as "of the greatest."

M. Zola, the French novelist, who is just now in the flood-tide of his popularity, besides being a novelist, is a dramatic critic for a Paris newspaper and a literary correspondent for a Russian review. An excited controversy has lately grown out of his connection with the Russian review. It seems that he had the indiscretion to criticise his contemporary French novelists in one of his letters with a plainness and severity, mingled with an ingenuous pride—showing, it is said, both his failing and his strength. The newspapers soon discovered it, and in a short time the letter was talked of everywhere in Paris. M. Zola finally reprinted it in *Figaro*. Alphonse Daudet, M. Flaubert and M. De Goncourt alone found favor at his hands. But the others were dealt with unsparingly. Except in one or two instances, his judgments are said to have been precisely what the literary public had already passed upon them, without saying it publicly and with no reticence, as he has done. His victims have protested in loud terms against the criticisms. One of them affirmed in solemn words that not to be regarded by M. Zola a serious novelist was to him a matter of indifference. Another claimed that the cause of M. Zola's attack was that he had not been sufficiently praised himself. Still another pretended to be angry at being so well treated, and urged the reviewer to strike again; while those whom he had not mentioned at all amusingly inquired: "Am not I a novelist, then, that he hasn't even anything bad to say about me?"

Mr. Hamerton regards Ruskin as the only artist in words of any conspicuous power who has written much, and with his best force, about painting. Some of the passages in "Modern Painters" are the productions of a consummate artist in words, but when Ruskin wrote them "the critic in him must have been silenced or asleep." It is not true, as Ruskin's works seem to imply, that it was the "Modern Painters" which revealed Turner to the world, for it can be shown by a simple comparison of dates that Turner had been a Royal Academician about seventeen years when Mr. Ruskin was born, and no artist is ever elected to that rank unless he is highly esteemed by his brethren. The date of Turner's emancipation from reality Mr. Hamerton fixes at the painting of "Kilchurn Castle," which was in 1802; it is the general belief that he did not become a dreamer till a much later period. This picture bears about the same relation to reality that our dreams do when we dream of some place that we have visited. There is one point, however, and one only, says Mr. Hamerton, in which Turner really did excel the artists of all time, and this was in his appreciation of the mystery of nature. The mystery of nature as applied to painting is probably a modern object of study and ambition, for of painters who lived before him there were none who had made a special use of it. Turner was conscious of this peculiarity in his art. When a picture of his had been sent to Mr. Lenox, in this city, he asked how Mr. Lenox liked it, and was told that he thought it "indistinct." "You should tell him," Turner replied, "that indistinctness is my fault." Turner was no diner-out, nor did he give dinners himself. He got up early in the morning and labored hard all day. The works he left behind him were enormous in quantity—"hundreds and hundreds of pictures," and "thousands and thousands of drawings and sketches," so taxt merely to copy these all completely, without the trouble of scheming and inventing them "would occupy a man for a hundred years." Surely he had no time for what Emerson calls the "cards, custards and compliments" of society. He was absolutely incapable of social courtiership in any of its disguises. When elected a Royal Academician he would not go to thank his electors, in obedience to the established usage. "If they had not been satisfied with my pictures," he said, "they would not have elected me. Why, then, should I thank them? Why thank a man for performing a simple duty?" One almost thinks it might have been Turner who said "the devil is the perfectest courtier." The American edition of this book, published by Roberts Brothers, of Boston, will be out to-day. It is issued in style uniform with the "Intellectual Life," and other works by Mr. Hamerton, and contains nine etchings from pictures by Turner.

RELIGIOUS INTELLIGENCE.

Three years ago, a Congregational minister, at East Hartford, Conn., was "deposed and degraded" by an ecclesiastical council duly called to consider his case. He is now supplying a Congregational pulpit in Vermont, *The Congregationalist* learns, and that paper in response to a request has republished the proceedings of the council which deposed him. The charges against him, it will be remembered were of "unchastity; of complicity in criminal abortion and of cruelty and inhumanity to his wife" and, the Council receiving no defence from him except "weak assevarations of innocence and idle efforts for delay," found the testimony against him "direct, positive and overwhelming." In the Vermont village he has been a leader in temperance and other reforms, and claims to be a Congregational minister in good and regular standing.

Bishop Borgeés (Catholic) of Detroit has sent his resignation to Leo XIII. and the letter has probably now arrived in Rome. This step is said not to be a new thought on the part of the Bishop, and doubts are expressed if the resignation will be accepted. The cause of the step is not publicly known, but *The Free Press* says there is every reason to believe that the chief cause is a desire for rest, Bishop Borgess having been for thirty continuous years in the priesthood, during nine of which he has been a bishop. Socially and as a religious leader, he has won much favor and many friends in his diocese, but his administration has been full of difficulties both religious and financial. What is known as the Callaerd difficulty is one of them, and the present status of it is cited as a possible second cause of his resignation. About two years ago, Father Callaerd, of, Marshall, Mich., was deposed from the ministry for cause. Dissatisfied with this, Father Callaerd sought a reinstatement, and carried his case to Rome. The Bishop has not only not opposed him but he has offered to reinstate him without further controversy. Father Callaerd refused to be reinstated except through instructions from Rome, and such instructions have now been received. The Bishop expects to perform the service before leaving the diocese, whether his resignation be accepted or not.

The building which Père Hyacinthe has taken for his new church in Paris is an old one and has been devoted heretofore to many secular uses. It has served in turn for a theatre, a ball-room, a lecture hall and a singing-room. When the church was opened the floor had been provided with chairs enough to seat nearly 500 people and in a gallery were seats for two or three hundred more. An organ concealed from view occupied one corner of the gallery. The altar table was very simple. It had a covering of white cloth adorned with garlands of flowers. Four candles were burning and real ivy was trailed up the candlesticks. In front was an open Bible and on the table rested a silver crucifix and a cross in natural flowers. On the wall, behind the table, was a gilt cross but it had no figure upon it. There were no small boys in white nor were there any incense burners. The pulpit was covered with red velvet. Père Hyacinthe entered the chancel dressed in a lawn surplice fastened with a silver cord and tassels. He was followed by the Rev. Dr. Forbes, chaplain of the British Embassy in Paris, who wore a black gown and who seated himself in an arm chair at the left of the altar. In his sermon Père Hyacinthe explained that, when his church was fully organized, the ceremonies will not differ from those used in other Catholic churches. Mass will be said, vespers will be sung, the benediction will be given and confessions will be heard. But certain doctrines of the Roman Church as it exists to-day, will be rejected. He claimed to obtain his sacredotal authority from the French martyred bishops who had ordained him and whose power came from God. The masses of the French people crave a religion, he said, which neither modern Protestantism nor modern Catholicism satisfies. He eulogized the Republic for having restored religious liberty and this is said to have been the best part of his discourse. By his protests against the superstitions of the Roman Church some disturbance was caused, but order, says a correspondent was soon restored by his musical voice, his magnificent gestures and his imposing presence. Of his own followers, there were very few in the church—not more than a dozen, says one report, including his wife, their little boy, the nurse and his mother-in-law. Père Hyacinthe has replied to the letter of the Archbishop of Paris. "I regret especially," he says, "that you saw in my frank statement to you only a miserable puff of myself," and he confesses he does not understand how "the most ordinary sense of common decency" (the archbishop's words) should preclude his having any intercourse with him, reminding the Archbishop at the same time that his "illustrious predecessor, Mgr. Darboy had other sentiments" and always treated him with respect. "In spite of all, Monseigneur," he continues, "and by the grace of Him who is greater than man, I shall remain a Christian and a Catholic, like you, though differently from you."

Stray notes from here and there: In 1853 there were in China, it is said, only 351 native Christians, (Protestants no doubt;) in 1863, there were 1,974; in 1868, 5,713, while in 1877, the number reached more than 13,000. At the same time, it is said, that of all class there are in China, India and Japan about 460,000 persons connected with Christian churches which have 200,000 children under their care .....A distinguished preacher in this country having been congratulated on a successful sermon, remarked that six years of special study of the gospel of John enabled him to write it..... It having been reported that a descendant of Copernicus was living in a small German town earning his bread as a shoemaker, *The London Echo*, remarks that he cannot be a direct descendant, as Copernicus, being a canon of Frauenburg, should have died without issue.....Leo XIII. not only writes good Latin prose, but verses of his in Latin have been praised.....The Established Church of Scotland and the Free Churches are at issue on the question of running street-cars in Glasgow on Sunday. The former has sanctioned the practice as made necessary by the habits of modern life, while the latter oppose it strongly on the ground that car traffic is only the beginning of inroads upon the sanctity of the Sabbath, which would be very speedily extended.....The Pope has issued an order that hereafter all debts, fees, etc. due to the Church shall be paid in gold, and some of the departments are protesting. "Impossible," they say, "we shall be ruined".....It is proposed in Pennsylvania that a home be established for the disabled Episcopal clergymen of the state..... Bishop Green has left the Reformed Episcopal Church and intends to form a separate organization with the title "The Reformed Episcopal Church in the United Kingdom of Great Britain and Ireland".....The Rev. Dr. Daniel Gans of Baltimore, who recently resigned his pastorate, is now, as are also his wife and children, receiving instruction from a Catholic priest preparatory to public confirmation.....The treatment which the late Bishop Cummins received from the Episcopal papers is declared by *The Advance* (Chicago) to have been "anything but creditable" and the spirit with which he bore himself under their "taunts and bitter speeches" only made the sweet nobility of his character shine the more conspicuously; for he was as charitable as he was courageous and as sweet-tempered as he was heroic."

SCIENCE FOR THE PEOPLE.

TO THE NORTH POLE BY BALLOON.—Commander Cheyne, of the British Royal Navy, is making efforts to get up an expedition to reach the North Pole by means of balloons. He is an experienced Arctic navigator, having served under Sir James Ross, and has secured the services of Captain Templar, a well-known aeronaut. Commander Cheyne believes that the Gulf Stream sweeps round the polar basin, and returns by the north and east of Greenland as a great body of cold water. He proposes to utilize this current in the following manner: The ship would proceed up Davis's Strait and Baffin's Bay; then, turning to the west, would steam up Lancaster Sound and Queen's Channel to the furthest explored point. She would next take a north-northwestery direction until the set of the current was felt, when her course would be altered to due north. In any case, she would push on through every available opening in the ice until her advance was definitely arrested by the advent of Winter. In addition to the usual equipment of sledges, etc., the vessel would carry several balloons, each one capable of lifting about a ton weight in addition to the men. When the ship became beset in the pack, three balloons would be inflated and joined together by means of three light spars 60 feet long. Thus a triangle would be formed, with a balloon at each angle. The whole together representing a lifting power of about three tons. This power would be employed in carrying the boat-cars, sledges, provisions, tents, ballast, etc. Commander Cheyne proposes during the Winter to establish two observatories about thirty miles apart, with the ship as a centre, so that by the end of May the balloons may start upon a curve already ascertained with tolerable accuracy. By this means, the distance of the vessel from the Pole and the course to be followed being known, the travellers would be enabled to drop within ten or twenty miles of their destination. Wire tackropes would be used for preserving an equal altitude above the ice. When it was necessary to descend, the gas would be preserved by recompressing it, by mechanical means, into the receivers, there to be held in readiness for future use. If the journey should have been successful and the wind favorable, the return trip would at once be made, the balloons being arrested on the parallel of latitude upon which the ship was left icebound. The commanding officer in charge would send out sledge parties daily to meet the balloons and give whatever assistance might be required. On the breaking up of the ice the ship would leave her Winter quarters and push round the northern extremity of Greenland. A second Winter would here be passed, the time being spent in making a survey of the coast and other scientific observations. During the following Summer, aided by the natural drift of the ice, the vessel would steam through every opening, and return home between the continent of Greenland and Spitzbergen. Should no favorable wind arise, however, to carry him back from the Pole to his ship, Commander Cheyne intends continuing his aerial journey, and trusts to good fortune to drop in Russia wherever inhabitants are to be seen.

A WONDERFUL TESTING MACHINE.—The great machine designed by Mr. Albert Emery, for the United States Commission for testing iron and steel which has been in process of construction for three years past at Watertown (Mass) Arsenal, is now completed. Some experimental tests made with it in the presence of the commissioners are thus described in *The Boston Traveller*: The merit of this new testing machine is its great power united with its matchematic accuracy. A five inch bar of iron was pulled apart, and the strain registered in doing it was 722,000 pounds. To attest its minute exactness, a horse hair was next submitted to the strain, and it yielded to a registered force of 150 pounds. Again, a pine block of four inches thickness and two feet in length was taken and passed into a board of two inches thickness. Then to the finish for refinement of accuracy, a hen's egg was taken and inclosed in glasses of Paris, with two small horses at each end, and the pressure being applied, the contents were forced out of these small apertures at a strain of thirty two pounds, and such is the command over the action of the machine that the pressure was stopped in an instant, and the yolk caused to be expelled, the shell of the egg remaining unbroken. A nut was also cracked by the machine without crushing the kernel. So such nicety of regulated pressure, combined with such an enormous range of power and absolutely exact registration of the strain exerted, has ever before been attained. The cost of the machine to the Government, under the contract, is $31,000, but Mr. Emery has expended over $100,000 in perfecting it.

CARBON AND THE ELECTRIC LIGHT.—M. Alf. Niaudet expresses a very decided conviction that carbon, and not platinum or any other metal, is the best material for the production of the electric light by means of incandescence. In support of this position, M. Niaudet adduces the following arguments: (1) At equal temperatures carbon possesses a power of radiation in excess of that of platinum. (2) The heat capacity of platinum is far greater than that of carbon, and the former, consequently, requires a far greater amount of heat than the latter to bring it to a given temperature. (3) Carbon is a worse conductor of electricity than platinum, and, consequently, may be of greater diameter without the temperature being reduced. (4) Carbon is absolutely infusible, and may be brought to a white heat without the circuit being interrupted owing to fusion. In the Sawyer-Man electric light, in which incandescent carbon is used, the pencils are formed, according to *The Scientific American*, by a special process. The carbons are about half an inch long, with the diameter of one-sixteenth of an inch. Their color is steel gray, and the surface is hard as steel; within the carbon is tolerably soft. In his earlier experiments Mr. Sawyer employed as the source of incandescence slender pencils of gas retort carbon in an atmosphere of illuminating gas. The carbons were slowly destroyed, but at the same time they took on a superficial deposits evidently of carbon, but unlike in lustre and hardness, any carbon that Mr. Sawyer had seen. Inferring that a more rapid deposit would be made in a denser hydrocarbon, Mr. Sawyer experimented with a great variety of such liquids, finding olive oil most satisfactory. His method is simply to heat the carbon to an extremely high temperature, by passing through it an electric current, while it is immersed in the oil. The best results are obtained by the use of a pencil of willow charcoal, upon which an intensely hard deposit of carbon rapidly forms as the hydrocarbon is decomposed by the heated pencil.

WHAT HAS MR. EDISON DISCOVERED?—The London papers have obtained from Paris a copy of the specification filed there with Mr. Edison's application for a patent for his electric light. This document reveals for the first time, authoritatively, the line upon which Edison is experimenting. It reveals nothing new, however, for in one manner and another the substantial facts in regard to Edison's experiments had all been obtained previously. The Edison lamp, it appears, is a piece of metal, which may be platinum, rhodium, titanium, osmium, or any other very infusible metal, fashioned into a coil, helix, ribbon, plate, or any other form, and made incandescent. The current is regulated by a metal bar through which it passes. This bar expands when the current is too strong, and shunts or short circuits the flow of electricity. Or it may be regulated by the operations of a diaphragm, which is acted upon by the expansion of the air or gas inclosed in a tube. This is all that Edison's specification aims at, so far as the apparatus of the lamp is concerned, and scientific men can now judge for themselves as to the probable success of the Edison light. The weak point of the lamp is this, that in order to be luminous, platinum must be heated almost to the point of melting. With a slight increase in the current, the lamp melts in the twinkling of an eye, and word comes from Menlo Park that in practice the regulator is found to short circuit the current too late generally to prevent the damage. It is this difficulty which must be overcome. Can it be done? In commenting upon the document *The Engineer* says: "All anxiety concerning the Edison light may be put on one side. It is certainly not going to take the place of gas, and its invention would not have been regarded with the anxiety and interest which have been displayed had it not been for the statements of newspaper reporters on the other side of the Atlantic. * * * In the whole specification we have not one word concerning any new or extraordinary contrivances for dividing the electric light."

New Publications.

HARPER & BROTHERS'

LIST OF NEW BOOKS.

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BEDOUIN TRIBES OF THE EUPHRATES. By Lady Anne Blunt. Edited, with a Preface and some Account of the Arabs and their Horses, by W. S. B. Maps and Sketches by the Author. 8vo, Cloth, $2 50.

II.

HISTORY OF THE ENGLISH CHURCH. A History of the English Church, from the Accession of Henry VIII. to the Meeting of Convocation in the Eighteenth Century. By G. G. Perry, M. A. With an Appendix, containing a Sketch of the History of the Protestant Episcopal Church in the United States of America. By J. A. Spencer, S. T. D. Crown 8vo, Cloth, $2 50.

III.

AFGHANISTAN. By Major A. G. Constable. 32mo, Paper, 15 cents; Cloth, 30 cents.

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