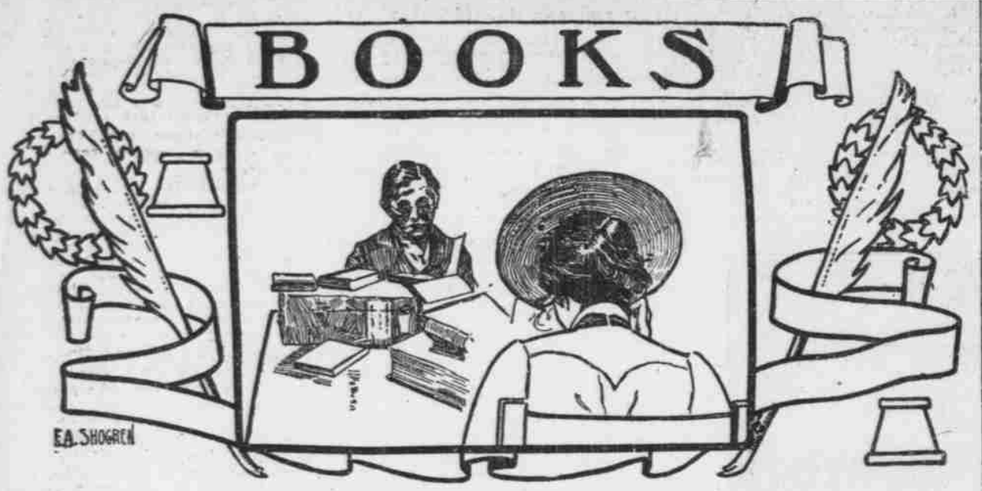


CHINA AND THE ALLIES

History of the Uprising of the Boxers, by Henry Savage, London —Other Publications.

Henry Savage Landor's new book, "China and the Allies" (Charles Scribner's Sons, New York), is in every sense a large performance. The author studied his subject at first hand with diligence, discrimination and impartiality. There are no second-hand facts or opinions. The work is in two noble volumes, with a total of 136 chapters and 876 pages. There are nearly 360 illustrations. Five of these are Chinese prints, reproduced in the full coloring of the originals, which show, among other things, a variety of tortures which the Boxers were preparing for captured foreigners.

The work is first of all a comprehensive view of the Chinese uprising, tracing the anti-foreign movement to its original sources and following the progress of the allies to Pekin. Mr. Landor was on the scene long before hostilities began and spent much time among the Chinese, following up the threads of the gathering trouble. His knowledge of the Chinese language helped him to gain an insight into the earliest causes of the trouble, and to present in this book a picture of China before the arrival of the allies. He was enabled to lay bare the true nature of the Boxer movement, and he fortifies his statement of facts by many original Boxer circulars and posters. The nature of the uprising was religious as well as political, and he gives a vivid picture of the part played by the Buddhist priest, who, for years before, made use of all the tricks of hynotism and spiritualism to inflame the rage of the people against the foreigners who threatened their religion as well as income.

Mr. Landor was in Tien Tsin during the gathering of the allies. His description of this remarkable assemblage and of the subsequent siege and the military movements preceding the march to Pekin are graphic and flooded with new light. The diary of the siege of Pekin presents much that is new. He compares the allies in action and inaction in vigorous, upsparing phrase. For the purposes of this book Mr. Landor might have been a man without a country, so impartial are his criticisms of all concerned. Sir Claude MacDonald's diplomacy comes in for a vigorous arraignment, and General Chaffee's military tactics are criticised. The common soldiers of each nation, their characteristics, personal as well as military, come in for much enlightening as well as interesting comment. The relations of nationality to nationality are discussed. He handles the question of looting with perfect candor, giving both sides and rather favoring the practice under certain circumstances. His description of how looting affected the greed of the soldiers of different nationalities is picturesque, and he does not exclude the American soldier from the comparison.

The summing up of his impressions is in the second volume in the chapter in which the troops of the allies are compared:

"The American soldier was the type, with some slight improvements, of the soldier of the future. He was a general and a tactician in himself. He had a great deal of dash and courage, and much unconscious perception and natural intelligence. He did wonders in the Chinese campaign, and were he to possess a stronger physique and a healthier constitution, both of which he does all he can to ruin, he would probably be the best soldier in the world."

Mr. Landor adds that "the line officers too, were perfect gentlemen, and most business-like soldiers," a fact we like to hear confirmed by a foreign critic. He also says that they "knew and did their work in a sensible, practical and excellent way."

That Mr. Landor is unbiased is proved by the praise he bestows upon the soldiers of another nation, the Japanese. "For marvelous neatness, exemplary conduct, and discipline, perfect transport and hospital arrangements, and admirable coolness in fighting under the heaviest fire, commend me to the Japanese. It was a pleasure to see them marching along, heavily-laden, in the most terrific heat, looking as neat as possible. The Japanese soldier lacked, perhaps, the physical strength of the Russian—the only soldier, as we have seen, that bore the hardships of the trying march to Pekin without flinching—and many of the little fellows, after struggling with all their might before giving up, eventually collapsed under the heavy weight they were carrying. For actual fighting the Japanese were undoubtedly as good soldiers as any of the allies, if not, indeed, better than the others."

Many instances of conspicuous American bravery are related, and here is one that is inspiring reading. It is the story of the Battle of Yangtsun, on the road to Pekin:

At about 1500 yards the line began to deploy with no very great opposition and in comparative safety, as there was fair cover from trees, undulations in the ground and stray houses; but when only at 900 yards the advance became very slow, and was made under a terrific fire, with no cover at all. The wedge formed by the embankment of the road and that of the railway becomes gradually narrower, and eventually forms a point at its northern portion. It was at this point that the First Sikhs and the Twenty-fourth Punjab Infantry were forced forward in close formation, with K and M companies of the Fourteenth United States Infantry by their side.

The First Sikhs advanced well until they found themselves in a narrow depression where they got pennied in and were exposed to very heavy fire. They held fast to their position, while the Americans came along in skirmishing order. The Fourteenth, which was ahead, when coming round the bend in the road, came under the fire of the gun which the Chinese had placed on the embankment near the water tower, and also from the rifles of the Chinese infantrymen in houses and behind trees. The Chinese, furthermore, were lining the whole parapet of the station platform, whence they kept up a hot fusillade. Their force consisted of Imperial troops in the center and well-armed Boxers at the sides. The Russians, advancing from the same direction, fired volley after volley into the Chinese, and, having brought up their artillery, shelled the enemy with great effect.

The Sikhs were for one moment under such heavy fire that they could not advance. Those few of the Americans who were not exhausted by fatigue and the terrible heat, were ordered by Colonel Daggett, when at 800 yards, and under a withering fire from front and flank, to rush the Chinese position. A handful of them, led by brace Lieutenant Murphy, of the Fourteenth, and a handful of plucky Sikhs, with Major Scott at their head, stormed the embankment, the Chinese running for dear life at their approach. Lieutenant Murphy was the first to reach the position where the Chinese gun had been; then, a second later, came Scott with six Sikhs. Captain Martin, with six men of Company M (United States Infantry) and one man of Company I, arrived next. The Chinese were very smart, and dragged away their battery when the enemy was only 300 yards off. It was very gratifying to hear Captain Martin speak in most glowing terms of the behavior of the Sikhs on this occasion, and one cannot find words sufficient to express one's admiration for such men as Lieutenant Murphy, Captain Martin and Major Scott, whose feat on that occasion spoke for itself.

So narrow was the wedge when the Americans passed the Sikhs that they actually formed two single lines. When double time was ordered the Americans were so much exhausted from the long march in the morning—the attack began at 11 A. M.—and hunger and thirst, that many dropped on all sides and became delirious, or went clean out of their minds. It was understood that, although wells had been passed, the American General had given strict orders that the men must not be allowed drink. Some of the fellows suffered agonies from the unbearable heat and dust and the broiling sun; one soldier particularly, who had become a raving lunatic, with his tongue parched and frightfully distorted features, was making gestures to his companions to shoot him, because he could bear the pain no longer.

Once the enemy dislodged from the high embankment, the victory became easy. Captain Taylor, of Company I, Fourteenth United States Infantry, was the first of the allies to enter the village to the left, and Colonel Daggett reached the platform just in time to see the Chinese withdraw in good order up the river. In their rear to the north the Chinese had one line of trenches on the road, one line at the bank of the river, and two lines across the plain. When the allies had seized the top of the embankment, the Chinese infantry, having occupied their first line of trenches almost parallel with the embankment, and about 800 yards from it, opened fire principally from their left, to protect the retreat of their artillery. They leisurely withdrew, gaily flying their standards. The American Ninth, on the right flank, had a splendid opportunity of firing into them at short range, and working great havoc; but as the Chinese were dressed in blue, and flew white, red and blue flags, they were mistaken for Frenchmen and so escaped. Later, the Frenchmen mistook the Americans for Chinese, and fired into them! Fortunately, they did not hit anybody. When the first error was discovered it was too late to pursue the enemy.

A worse mistake happened. Either the Russian or the British gunners (nobody seemed to know for certain) sent a few shells among E Company of the Fourteenth United States Infantry, killing eight and wounding nine. The first Chinese trench was taken by a regiment of supports, and the others were evacuated. Two squadrons, one being Hinde's, of the First Bengal Lancers, went in pursuit of the enemy in the evening, and succeeded in killing 50. One of General Ma's flags was captured, and five standards, and so was a trumpet, with the trumpeter. Two lancers were wounded and one horse was shot.

The Americans and British, who had borne the brunt of the fighting, had a heavy list of casualties. American: 21 killed and 54 dangerously wounded. British: 46 killed and wounded. The American funeral was a most impressive sight. Preceded by the brass band (the American was the only force among the allies which had a band on the march to Pekin), the killed were brought up to a large grave, where a touching service was read, and then the bodies were laid to rest side by side until they could be conveyed, at the expense of the state, back to America.

Of course, Mr. Landor has more or less to say on the missionary question and some of his criticisms will not be read with pleasure by the missionary boards of this country. There are in China, he says, good missionaries and bad ones. The bad ones generally seem to escape unhurt. There is plenty of good work to be done in China by sensible, practical missionaries, not so much by Christianizing the natives as in teaching them what is of the utmost consequence in our civilization, science, art, industries, medicine and agriculture. The popular idea that anybody is good enough to spread the Gospel among the heathen has resulted in sending out young, inexperienced women with suburban ideas and education into lonely and almost inaccessible places in China, where, ignorant of the language, cutoms and ways of the people, they are objects of contempt and ridicule, and sometimes of violence. A brain sufficient for the reading of family prayers and the organization of village charity bazars is not all that is required of an effective missionary. If only practicable men with big brains, with a common-sense view of things, could be sent out "the shocking outrages such as have occurred in the Boxer trouble would be prevented or greatly minimized; huge sums of money, now absolutely wasted, could be spared to do ggood at home, where it is more needed than in China, and much unnecessary friction could be prevented, making the relations of heathen and foreign devils infinitely pleasanter."

Dreyfus' Story of His Imprisonment

Five Years of My Life, 1894-1899. By Alfred Dreyfus, ex-Captain of Artillery in the French Army. McClure, Phillips & Co., New York.

Seven years ago the tragedy and mystery of the Dreyfus case aroused the world, convulsed France, and held French officialdom up to shame in the eyes of civilization. Black chapter was added to black chapter in that drama of political and racial hatred and persecution; forgery, perjury, disgrace and suicide followed one after another, until none knew whom the lightning might blast next, and through it all the central figure, helpless on his rock in mid-ocean, kept an enforced silence. Now France has tacitly confessed her error and Dreyfus, free once more, has given his own account of the trial, condemnation and release.

After his liberation Dreyfus retired to Cologny, a village in Switzerland, near Geneva. There, surrounded by his wife and children, he sought to regain, in a measure, the health and strength which his banishment had cost him. And with his returning physical powers he took up the writing of his autobiography, completing it last February. This he has dedicated to his children.

When Dreyfus was safely landed on Devil's Island he was given numbered sheets of paper, that he might write to his wife. Thus he was able to begin, April 14, 1895, what he called in the first entry "the diary of a sad and tragic life." This diary is a revelation of the character of the man. Such extraordinary pluck and grit, such bull-dog purpose to prove innocence, such determination to live, when to die would have been far easier, are not contained in any other record of human suffering. The diary was continued until September 19, 1896, when disease and torture drove him to conclude it with an appeal to the President of the French Republic. Dreyfus thought that death was near, and he requested that the diary be given to his wife, by her to be published after his death. It was seized with his papers later in the year, and was never given to his wife. He recovered it at the Rennes trial, and the diary is published for the first time in the autobiography.

Dreyfus tells us how, on Monday, October 14, 1894, after having said good-bye to his wife and his little daughter Jeanne, he was accompanied to the door by Pierre, his son 3½ years old. It was some five years before the husband and father returned to his home and those he loved. This is the "real tragedy" of the Dreyfus case. It is unfolded with absolute simplicity in the autobiography; it is told in the diary, and it is revealed in the letters of Madame Dreyfus to her husband. These letters were writen right from the heart. They disclose a beauty of soul and a lofty heroism such as few women have ever shown. To turn to them from the so-called love-letters of the day—to the real from the unreal—is to turn from ephemeral literature to the literature that has some enduring qualities.

The whole dreary business recalls the worst phases of the Middle Ages, rather than the closing years of the 19th century. And yet, Dreyfus is not bitter. In his greatest agony he preserved his faith in justice, and final exoneration, and his devotion to France is unshaken.

The Army and Navy Woman.

The Ways of the Service. By Frederick Palmer. Charles Scribner's Sons, New York.

We have always had an Army and a Navy and consequently we have always had the Army and Navy woman. Somehow, however, she has heretofore escaped the eye of the novelist. It remained for recent wars to bring the novelist and the Army and Navy woman together, and that is how Frederick Palmer came to discover her. Once discovered, he studied her, and now he has made her a heroine. His Mrs. Gerlison crystallizes his conception of this delightful discovery, but there are other women of the service, beside Mrs. Gerlison, in his pages, who live very real lives. The wife of an Army or Navy officer cannot be kept away from his station. General Otis tried it, and failed. The fair enemy only laughed at him and told him that their husbands only were under his orders. One wife, coming by the first merchant steamer that could bring her from Hong Kong, was housekeeping in Manila two weeks after the American occupation. There are many more American women in the Philippines now than there ever were Spanish women. "That is why our officers are more confident than the Spaniards," Mrs. Gerlison told General Otis. Scores of women are making homes for their husbands in remote garrison towns which as yet have none of the comforts of India. Many of them have been under fire; not a few have seen their husbands brought in dead or wounded after the engagement which they had watched in helpless anxiety.

The stories are concerned with Army and Navy life in the Philippines. They are worth reading for the picturesque view they give of the conditions which surround the men who are fighting for American supremacy in the new possessions.

Reconstruction in the South.

Henry Bourland: The Passing of the Cavalier. By Albert Elmer Hancock. The Macmillan Company, New York.

The interest is fixed not so much by a rapidly moving series of adventures as by the characters, who with their loves, joys, sorrows and tragedies, symbolize the human forces at play in a critical period of American history—the reconstruction period in the South. The biography of Henry Burland typifies the Southern cavalier whose social ideal was suppressed after the war by the progress of evolution in American politics. He enlists in the Confederate Army, is in Pickett's charge at Gettysburg, and at the surrender of Appomattox. He returns home, still unbeaten in spirit, with the hope of restoring the prestige and fortunes of his house. He is a Bourbon, representing the old ideals face to face with the new regime of reconstruction; the regime of the leveling process, of negro domination, of readjustment. The writer emphasizes a fact not yet sufficiently recognized; that the late sectional bitterness was due not so much to the war as to the drastic method of reconstruction. The point of view gives a distinct individuality to the book. It is written by a Northerner who has put himself in the position and atmosphere of the Southern planter. Among the incidents and descriptions are the firing on Fort Sumter, the battle of Gettysburg, Lee at Appomattox, the leveling process and its consequences, a carpet bag Legislature in session, the operations of the Ku Klux, the suppression of negro domination, the return of the Bourbons, the political factors of the new South, the eviction of the cavalier. Political intrigue and three love stories give interest to the narrative.

Stories of the Klondike.

The God of His Fathers. By Jack London. McClure, Phillips & Co., New York.

Those familiar with Mr. London's work will be glad to get back into his world again, to feel the great white silence settling over them, to catch the creak of runners, the snarling of the dogs, the cracking of the ice along the Yukon, the meetings of elemental loves and hates, the lust of gain, the grimmest of humors and the bleakest of deaths. To those who now for the first time cross into the circle under the guidance of this clear-visioned wanderer, it will be an awesome experience, for a time overwhelmingly impressive. New or old to Mr. London's magic, they will wake with a start at the book's close to the common luxuries about them, wake with distaste or relish as the temperament may be, and stare in wondering surprise at food and warmth in plenty, at the green of tree and field, and the easy, open trails. For it is a barren white country they have tracked with the men of the Northland—"a practical breed, with a wholesome disregard for theories and a firm grip on facts"—where the days are made up of vain struggles with pitiless forces, dreary spaces of frost and famine, harsh contact with primeval things; and yet illuming so bleak an existence are many of the things that make life endurable—comradeship, self-forgetfulness and sacrifice, the surpassing love of women and the loyalty of men. The stories are drawn from a motley crowd of French-Canadians, Indians, Swedes and half-breeds stranded in the Klondike country. They are clean, swift and virile and full of healthful optimism.

Novel on New York Society.

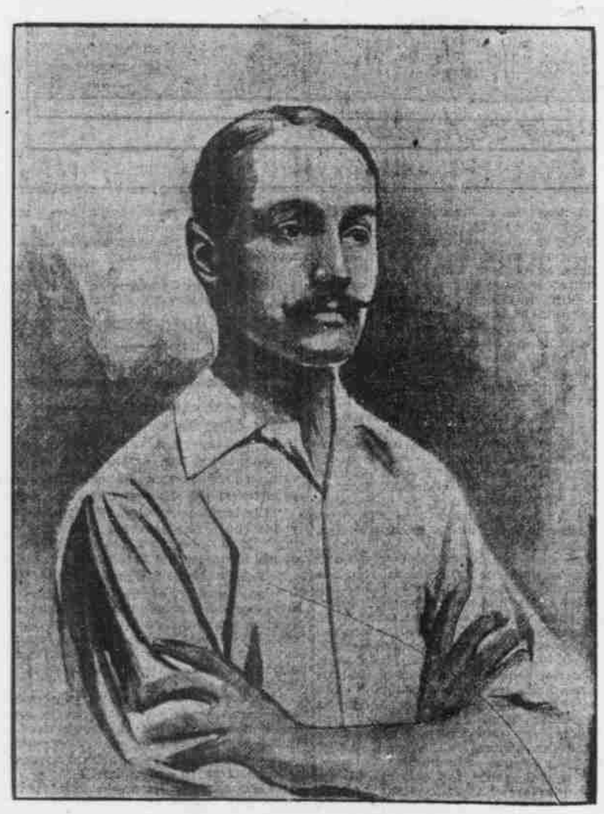
A Victim of Circumstances. By Miss Geraldine Anthony. Harper & Bros., New York.

This is the fourth of the 12 American novels to be published this year by the Harpers. The members of a certain fashionable set in New York society find in its pages much that reminds them of their own doings, and some of their number have good reason to believe that they can see themselves reflected in the traits of certain of Miss Anthony's characters, if not as full-length portraits. Among the latter, however, one has not to go far to find the originals of Maturin Townshend, the courtly beau of the old school, with his collection of miniatures and rare books; Madame Trevor, of Fortmount-house on the Hudson, the determined and veteran old grandmamma; Bobby Floyd, the irrepressible and flippant youth who never opens his mouth but to fall into trouble, and to get everybody into mischief; and Mrs. Acres, the gay young matron whose characteristic remark gives her away: "I have some cousins who cross themselves whenever my name is mentioned"—the sort of woman who always sings, as the severe Miss Harcourt observed once with asperity. Spriggy Harcourt herself is not unfamiliar to those who know her set, and Flip—or Miss Trevor, to be more respectful—is a portrait that many women no doubt would like to sit for.

Current History.

Current History. Current History Publishing Co., Boston.

The June number opens with a very able and pithy, critical estimate of the life work of Lord Salisbury, "the proudest aristocrat in England," written from an opponent's point of view. The writer makes the remarkable statement that "the English are not a democratic people. They have less of the democratic instinct than any other nation in Christendom." The article on Lord Salisbury is probably the last from the pen of the famous English journalist, William Clarke, as the writer died suddenly shortly afterwards, while on a tour in Herzegovina. The other contents of the number embrace the usual comprehensive but concise and clear-headed review of the chief news of the world during the preceding month, serving to fix in the reader's memory a clear idea of many things that the daily papers tend to render confusing. The leading topics of the month are the "Situation in China," the "Nightmare in South Africa," "Russo-Japanese Relations," "Cuban Question," "Suffrage Question," "Pan-American Exposition," "Opening of New Ontario," the "British Budget," the "Invisible Spectrum," and the "Pros and Cons of Trusts."



HENRY SAVAGE LANDOR.

The American Husband in Paris.

The American Husband in Paris. By Anna Bowman Dodd. Little, Brown & Co., Boston.

The author of "Three Normandy Inns" and "Cathedral Days" has essayed a new role and given us a sparkling little story in the form of a play, full of clever character drawing and dialogue, with here and there a vein of satire. Mrs. George Nash, the wife of a New York railway magnate, had spent several seasons in Paris, and she prides herself that she knows the city and in touch with its best society. Nash goes to Paris for rest from wasting labor, and his wife becomes his guide. She introduces him to the exclusive set and drags him from dinner to dinner and reception to reception. The man of business makes a poor showing in the drawing-rooms, but at the Ambassador's ball he is surrounded by the representatives of the great powers and paid the deference which his standing in the financial world entitles him. It is then that Mrs. Nash begins to realize that stupid, matter-of-fact George is really somebody. Then he falls ill because he has been run almost to death by her flitting from one function to another, and she nurses him with perfect devotion. Some of the types are not altogether agreeable, but they are part of the make-up of society.

Underworld's Pull With Officialdom

The World of Graft. By Josiah Flynt. McClure, Phillips & Co., New York.

Josiah Flynt has made a National reputation for his fearless attacks on the barefaced collusion between the criminals and police of the large American cities. He speaks with candor, for he is sure of his facts, which he gained in personal, even intimate, contact with the thieves and tramps whose damaging testimony respecting the protection given them by the police he lays bare with boldness and vigor. Chicago is designated as "Chi—An Honest City," because its officials keep faith with the underworld. New York is "York—A Dishonest City," because its officers make promises to graftdom but have not the backbone to keep them in the face of the demands of reformers for the suppression of vice. Boston is known as "A Plain-Clothes Man's Town," because a grafter has to be careful in exchanging confidences. In every city he must exercise some caution, but in Boston he must execise a good deal, as he never can tell when some amateur detective, representing the reformers, may be put on his track.

A Real Journey to Nature.

A Journey to Nature. By J. P. Mowbray. Doubleday, Page & Co., New York.

The author of this charming philosophical outdoor book has spent much of his life in the wilds of Minnesota with the surveyor's chain, where the loon and the gray wolf were often his intimates. The papers, which originally appeared in a New York paper, sketch the experiences of a Wall-Street man whose physician orders him to give up work and go to the "recuperative wilderness" for his health. It is a long fly from the luxury of urban life to Nature, but the conversion of the author is eventually very genuine. Mr. Mowbray writes like a true son of the soil. In this time of innumerable nature books by persons who spend a few days in the woods gathering wild flowers and measuring the girth of trees, this simple, forward tale is welcome for its freshness and individuality.

Romance of Colonial Maryland.

The Tower of Wye. By William Henry Babcock. Henry T. Coates & Co., Philadelphia.

This is a story of early Maryland colonial life, full of incident and interest. It tells how Richard Smith and Ratcliffe Warren were sent out from London by the firm of Cloberry & Co., to Claiborne's new colony on Chesapeake Bay. The scene is laid principally on Kent Island and Wye Island, where the tower is still remembered in local tradition. The trials and tribulations of Smith and Warren are due to the quarrels between Claiborne and Lord Baltimore's men. The legendary figure of the lost Virginia Dare flits in and out of the story with picturesque effect, and love tales alternate with the clash of battle.

Romance of the Second Punic War.

The Lion's Brood. By Duffield Osborne. Doubleday, Page & Co., New York.

For this healthful, vigorous story of love and war in the days of ancient Rome, Mr. Osborne finds material in the famous Italian campaign of Hannibal. The title is taken from the term applied to the sons of Hamilcar, the old Carthagenian General, all of whom particularly Hannibal, one of the greatest soldiers of all time, appear in the novel. Hannibal's victories at Thrasymene and Cannae play important parts in the story. There is a splendid love story, with Sergius, a Roman patrician, and Marcia, a Roman maiden, as the principals.

DRESS REFORMERS JUBILANT

Help to Enlist England's Ruler in Their Crusade.

American dress reformers see a bright, new light dawning in the East, says the Chicago Tribune. Reports from English dress reformers, it continues, are to the effect that King Edward secretly favors the movement, and that he may at any time publicly put the stamp of his approval on the garments which the Healthy and Artistic Dress Union of England recently exhibited at Birmingham. The Healthy and Artistic Dress Union are crying down with the high hat the full-dress evening suit and the present styles of women's dresses.

The dress union claims that King Edward has but to approve a single one of the innovations proposed by the dress reformers to make it immediately popular and brings it into general use. The dress reformers have the greatest hopes for the King, for they say he has always stood for beauty and suitability in clothing, as opposed to mere fashion and conventionality. He, it is declared, has always hated the high hat, and the dress reformers confidently assert that he will soon adopt some of the various styles of hats proposed by the Artistic Dress Union and thus deliver the death blow both to the tall silk plug and the opera hat.

Reform in Evening Dress.

The dress reformers also declare that the knell of the present style of evening dress can be heard tolling dismally. Here again they declare they have every reason to count on the assistance of King Edward, who has several times shown his displeasure of the funereal garments that a man is compelled to wear when he goes out in the evening.

When the dress reformers get their ideas popularized, there will be a great task before the tailors, for not one vestige of the present fashion is to be retained. Men will appear at evening parties and at the theater clad in velvet coat, with knickerbockers and long silk stockings and lace collars and great lace ruffles, instead of the starched shirt bosom of today. Deep lace ruffles will also supplant the white linen cuff, and a soft hat, perhaps three-cornered, like the kind George Washington wore, will take the place of the tall silk hat.

The Healthy and Artistic Dress Union and its American devotees propose to steer clear of the rocks on which previous dress reform movements have been wrecked. The members of the union declare that the mistake made by the average dress reformers is the utter sacrifice of beauty. The new movement devotees take as their models the Turkish and Japanese women, who gown themselves exquisitely, and yet whose garments are not only charming to the eye, but easy and comfortable as well.

Ease of Dress Desired.

The disciples of the new dress reform make a special point of ease in costumes and enthusiastically condemn the long skirt Fashion allocates to her smart feminine devotees.

The garments exhibited by the Artistic Dress Union at Birmingham were calculated to aid those who are ignorant on the subject of hygienic and artistic fashions and to strengthen others who are resolved not to be tyrannized over by their tailors and dressmakers in their desire to wear clothing which is at the same time beautiful and comfortable. All the dresses shown were made in one piece, so that the weight fell from the shoulders, and not from the waist, and thus enabled their wearers to walk freely.

The union says it does not wish to popularize the knickerbocker costume among its women members, except for exercise in gymnasiums, and then the costumes are always to be worn with a tunic

HARNESSING THE SUN

SOLAR MOTOR PUMPS WATER FOR IRRIGATION.

Machine at Pasadena Which Promises to Be of Great Benefit to Fruitgrowers.

Considerable attention has been directed of late by the press to the performance of a new solar motor which has been erected at South Pasadena, Cal., and the Engineering News gives the following terse and interesting description of the machine and its operation:

The present machine is the result of a series of expensive experiments extending through several years. It was built in Boston, where the company controlling it is located, and was shipped to Pasadena some months ago to give the promoters the benefit of the perpetual sunshine of the Southern California summers in which to finish their work.

The present degree of perfection of the apparatus has been attained, not so much by any inventions, as by painstaking attention to all the details and the improved application of principles which have been made use of in former unsuccessful solar motors.

The two principal features of the machine are the reflector and the boiler. The reflector takes the form of a truncated right circular cone. The greatest diameter is about 33 feet, the smallest diameter 16 feet. The surface of the reflector is made up of 1788 plane mirrors whose reflecting sides form the inner surface of the cone. These mirrors are of glass, of the thickness of ordinary window glass, and are covered on the back with three coats of pure silver, and over this is a preparation to render them weatherproof.

It will be seen that if the axis of the cone is in line with the sun, all rays incident upon the mirrors will come to focus on the axis. The reflector is put in this position in the morning, and is automatically kept in focus by an escapement device which is operated electrically by a clock every 20 seconds. The reflector is thus put in perfect focus every 20 seconds throughout the day.

The whole machine is suspended in two trolley-ways by two heavy cables. The rollers are pivoted on top of either tower, and the tracks are double and curved, so that the entire reflector may be revolved on the rollers to secure the proper declination. The photograph was taken in the Winter, when the sun was far south; and shows the reflector tipped well up on edge.

The structural work is entirely of iron, and is designed to resist a wind velocity of 100 miles an hour.

The boiler is, of course, in the focus of the rays at the axis of the reflector. It is 13 feet 6 inches in length, and has a capacity of 100 gallons of water, with an additional space of eight cubic feet for steam. The shell of the boiler is a large, straight steel tube, with a steam dome at the upper end.

The interior construction of the boiler is of a special design, as is at once seen to be necessary, since it must be turned with the reflector through nearly 180 deg. every day in order to follow the sun. A special device prevents water from siphoning over into the engine as the boiler is tipped back and forth. The managers do not wish to describe this feature of the apparatus at present. The boiler is, of course, furnished with a safety valve and water guage. It works at a pressure of 150 pounds, which is attained in one hour after the reflector is placed in focus. The boiler is covered with a preparation containing lampblack.

A pipe covered with asbestos conducts the steam to the engine. The engine now used is of the compound condensing type, and of 11 horse-power.

The engine is belted to a centrifugal pump which raises 1400 gallons per minute from an artificial well 16 feet deep. The net lift appeared to be about seven feet.

The most obvious application of solar power is to pump water from the thousands of wells which are used for irrigation in vast regions of Southern California, Nevada, New Mexico and Arizona. The days in those localities are almost absolutely cloudless from April to October, and the heat in many places is intense.

The chief obstacles to the development of large portions of these lands are scarcity of water and the high cost of fuel. If the solar motor succeeds in providing the former, while avoiding the cost of the latter, all the more desirable parts of the Great American Desert can be brought to a fair degree of productiveness.

It is thought that it will not be found advisable to increase the size of the machine over the one now in operation. This one now furnishes fully 10 horse-power, and improvements now under way will probably increase this to 15 horse-power.

Where large power is required several reflectors and boilers may be used to furnish steam to one large engine.

Speaking of this machine the Imperial Farmer remarks:

"The old saying, 'Make hay while the sun shines,' is now to be practically illustrated in another way from the original thought. After the solar motor is used to pump water to irrigate alfalfa no diagram will be necessary to illustrate this new application of an old adage.

"If continued experiment demonstrates the practicability of the invention, it is destined to work a revolutnon in the matter of motive power.

"If the rays of the sun can by means of this motor be converted into electricity and stored up during the day for use at night, it will be possible for small towns and villages to do their own lighting at small expense. With the improvement in the storage battery, there is scarcely a limit to be placed upon the possibilities of this invention. It is already used for pumping water, but its capabilities are so nearly infinite that it is attracting widespread attention."

HOW TO PACK A TRUNK.

Valuable Hints for Those Who Are About to Travel.

In packing a trunk all the heaviest articles you have to carry go at the bottom of the box, with the spaces between filled up with stockings, vests and other small articles of underwear. Remember that if you are going to take a long journey the tighter you pack the better the articles will come out at the end. It is loose packing that makes creases and breakages. The secret of good packing is to keep everything in layers. A firm layer of undergarments should go at the bottom, upon which the dresses can rest.

Put in the thickest skirts first, having folded them as nearly as possible in the lines they take when in wear, and as you place the skirts in the trunk see that each is laid in the opposite direction to the one last put in. If the waistband of one skirt comes at the left side of the trunk, see that the waistband of the next comes at the right side. Attention to this keeps the level in the box, for naturally the hem end of a skirt is its most bulky part.

Cover the heavy skirts with a towel; then place the light ones, with another towel to protect them. Next pack the heavy bodices, with a special covering also, and, lastly, pack away the light bodices and blouses. If both skirts and bodices be folded as far as can be in the natural lines they take upon the figure.

If you have boots and shoes requiring special stockings to match them, force these inside the foot part. They practically serve as trees, and you know where to find them at a moment's notice.

If you are not taking a dressing bag, pack the toilet articles, such as eau de cologne, tooth powder, soap, toilet powder, etc., in a cardboard box by themselves, and fill up with handkerchiefs, etc. Cared for in this way, bottles will rarely break.

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