

WORK OF EDISON'S RIVAL

Something About the Interesting Career of Nikola Tesla.

WONDERS ACHIEVED AND TO BE

His Achievements in Electrical Research Endless Possibilities of Problems He is Now at Work Upon-Experiments With Roentgon Rays.

'From the New York Sun.

'From the New York Sun. Nikola Tesla is a man about whom the general public knows very little. There have been magazine articles about him and books about him, and, since Professor Roentgen made known his discoveries in X-ray photography and Tesla followed up the discoveries with experiments of his own, the pa-pers from time to time have told how Tesla had "seen the human heart" and Tesla had "seen the human heart" and had "photographed the human brain" and done other wonderful things. His name has been on the tongues of many people, but not one man in a hundred could tell wh.t Tesla had done for science, or very little if anything about

him personally. Tesla himself is responsible for the lack of popular knowledge of himself. He isn't one of the kind to hide his light under a bushel, but he lets the light shine and hides himself. He doesn't like to see his name in print. He doesn't like to be praised for what he has done or is doing. He wants, more than anything else, to be let alone. He discourages notoriety of any sort When newspaper men call on him to ask him questions he is the quintessence of courtesy and politeness. He is willing to tell them anything they want to know about electricity or any of the other subjects on which he is well informed, but on one subject-Tesla-he is silent. When the Sun reporter called on him early last week and told him that he had been instructed to write a story about Tesla and his inventions, the inventor said:

'Don't; there has been too much already," and he said it in a way that showed he meant it. It was only after a second visit and much earnest urging that he would consent to the publi cation of anything, and he surrounded his consent with conditions.

THINGS DONE.

was asked to tell which of his many loventions he considered the most useful and satisfactory to him, and he replied that first in the list was the transmission of power with the help of wires. This power was the alterelectric current now in use. nating Next he mentioned the motor that made possible the transmission of power with only a single wire. It used to be supposed that two wires were necessary to complete a circuit, one for the electric-ity to come back on. This motor does away with the extra wire, and lessens the expense and the waste. Third, he mentioned the thing which he hoped to accomplish: Doing away with that wire altogether, and using the earth. accomplish: lecture delivered before the American Institute of Electrical Engineers in 1891, Tesla said:

We are whirling through endless space with an inconceivable speed. All around us everything is spinning. Everything is moving. Everywhere is en-ergy. There must be some way of availing ourselves of this energy more directly. With the power derived from it, with every form of energy obtained without effort, from the store forever inexhaustible, humanity will advan with giant strides. The mere contem-plation of these magnificent possibilities expands our minds, strengthens our hopes and fills our hearts with ex-treme delight."

treme delight." He had this third thing in mind when he delivered the lecture. He has been working now ten years to accomplish it, and he has had encouraging success

with his experiments. Of his inventions, in this talk with

thing which most occupied his time and thoughts, however, all through this period was his old discovery of the rotating field principle for alternating current work, and the application of it in motors that have now become known the world over." Up to this time the alternating cur-rent wasn't in favor with electrical en-

rent wasn't in favor with electrical en-gineers. They knew little about it and did not realize its value. It wasn't until 1886 that Tesla himself succeeded in putting into practical operation the idea he had conceived when he was a student at the Polytechnic Institute. It is the completion and practical work. it is the completion and practical work-ing of this invention that will enable the Magara Falls Power company to transmit its power far from the falls where it is generated with the aid of the forces of nature.

THE MAN HIMSELF.

But before telling what Tesla has done, more may be told about Tesla himself and where and how he works. He is a man of very regular habits, wherein he differs from Edison, who works fifty or seventy-five hours at a stretch, sometimes longer, when he has on hand something that interests him. Tesia is up every morning at 6% or clock. He has a lot of gymnastic exercises that he goes through with regularly. He has a light breakfast and then he ioses little time getting to his work. He takes an hour for his luncheon in the middle of the day and the afternoon the middle of the day and the afternoor is devoted to hard work. He usually works until \$ o'clock in the evening, but often it is until midnight. His labora-

is at 46 East Houston street. has a clerk who attends to visitors, keeps away cranks, keeps a scrap-book, and sees that everybody who has real business with the inventor is pro-vided with the latest copy of some sci-entific paper until Mr. Tesla is disen-gaged. He also has a dozen or more mechanics who are as loyal to him as Edisor's man are to him, but the namechanics who are to him; but the na-Edison's men are to him; but the na-ture of his work and the magnitude of the problems he sets himself to solve do not permit of their rendering him the same sort of assistance that the Wizard's men furnish to their employ-er. A friend of Tesla's was asked what was the most interacting that of his

was the most interesting trait of his character. He replied: "His love of humanity and his friend-"His love of humanity and his friend-ship for young men who are ambitious to succeed and willing to work. Tesla wants things accomplished. He is jealous of no man. I believe if he worked on a problem twenty years, and was about realising success just as an-other succeeded, he would be as happy as if he had succeeded himself. His in-terest in his work is entirely a desire to advance the science for the benefit of all mankind. I think this is shown by the

mankind. I think this is shown by the fact that he is not a rich man. He could have been a millionaire if he had

had any desire to be so." If he had devoted his time and ener-gies and his inventive genius to money making there is no question but that he would be rich today. Tesla can in-vent anything. Tell him, what you want and he will work at it until he accomplishes it. But if he devoted his time to inventions of that sort, the broader propositions and memblems broader propositions and problems would go by the board. He would have no time for them. It is to solve them broader that he delights to work.'

Now to take up some of the things Tesh has done. It may be said, to start with, that to talk about Tesla's inventions leads one into a maze of electrical terms that defy the understanding of the mind not educated in electricity; and anything like a description of the technicalities of his work, his discoveries, and his inventions here would be about as valuable as a column of He-brew jargen. Hence, all that will be attempted is to tell what he has accomplished. First, take the transmis

sion of power. When Tesla came into this field in America, as stated before, little was known of the alternating current. The single alternating current was used but for the purpose of lighting only. The continuous current was used almost exlusively.

HIS FIRST TRIUMPH.

The continuous current system is very good for short line work, but with It energy cannot be delivered success-fully at any great distance at high pressure. To deliver the continuous current at high pressure at a distance would require the use of wires so heavy that they would be cumbersome and enly believe in the existence of material streams penetrating the skull. Thus it may be possible by these strange aptirely impracticable for use. Tesla made an alternating current motor that permitted the transmission of energy long distances at high pressure over thin wires, the delivery being made at the same pressure or at a lower or a higher pressure, whichever was de-sired, by means of a transformer. Thus the bridling of the power in Niagara was made possible, and natural forces everywhere can be similarly harnessed and made to do the work that has heredow projections, the possibilities of the application of his discovery are vast. I am happy to have contributed to the and made to do the work that has here-tofore been done at great cost by other forms of force and energy. A great many smaller inventions are included in this great one. Its possibilities are just now beginning to be realised. Tesla's discoveries in connection with this motor, it is said, were the prime cause of the resent convolution of the development of the great art he has created." created." Tesla has prepared five papers since this one, in each of which he has told something about some branch of the new photography that had heretofore been unknown. Some of the pictures he has obtained are wonderful. The last and the one that created the most talk is a picture of a man which shows among other things, the outline of the heart. Tesla showed this picture to the Sun reporter, together with a picture of a leg and foot, both of them remarka-ble specimens of the work of the Roentcause of the recent consolidation of the Edison and the Westinghouse Electric companies. In this motor two wires were used for the transmission of the current. Tesla believed that the extra wire was sould be reformed only by producing more energy; that energy was in nature and the problem of getting control of it and of utilizing it was the problem on which he worked. He cared nothing for ordinary invention. He thought lieved that they would be mastered and the whole world would benefit. Tesia is a man of striking person-test is a man of striking personole specimens of the work of the Roentgen photography. Tesha was once asked if he was well off. His reply was: "If every man who uses my machine in electro-thera-py alone would give me a quarter I would be a very wealthy man. I never received a dollar for it, and there is no way in which I could. I receive a small income from my invention in the rotat-ing field, and I have a small income from home. All this I spend here." Re-garding the future he has said: "I ex-pect to live to be able to set a machine in the middle of this room and move it by the energy of no other agency than gen photography. is aiming at. That is the transmission of power and intelligence without any wires, by means of the earth itself. If such a thing can be accomplished the human mind can hardly conceive of the possibilities. Tesla telieves that it can be accomplished. The fact that he be-lieves it is proved by the ten years of work he has devoted to experimenting by the energy of no other agency than the medium in motion around us." on that line. Statistics Which Show That the Two Ar Next in order, as Tesla mentioned them, is the perfection of an apparatus for the production of electrical vibra-tions. Electrostatics is the science of electricity at rest. Tesla demonstrated that for the production of light waves, primarily, electrostatic effects must be brought into play and he formed be brought into play, and he formed the opinion that all electrical and magabout 86 per cent. says London Tidbits. Of those ladies who take honors at Girton, about one in ten marries, and netic effects may be referred to electros tatic molecular forces. In a glass bulb filled with electrostatically charged molecules he found that by agitating at Newnham the proportion is one in nine, that is to say, 90 per cent., and them, causing them to vibrate, to strike against each other, brilliant light was about 89 per cent. respectively do not marry. It further appears that two in every produced. No carbon was required, such as is used in the ordinary incan-descent light. There was nothing but five marry of those who take an ordin-ary degree at Girton-in other words. 60 per cent. remain unmarried. The the glass bulb. Tesla's accomplish-ment was the making of apparatus to percentage of marriages among less highly educated women is greater than among those trained at the universities. and the above figures seem to suggest that not only does the higher educa-tion of women result in a lower marhis great inventions, a total form of the sector of the se riage rate among them than among their less learned sisters, but that those ladies who are most successful in their university career either lose their de-sire for marriage in their love of learn-ing, or reduce their chances of getting a husband as they increase their intelof the total 1,486 from the various col-

NEARLY A MILLION A YEAR

Steam is forced into the engine at high pressure, which produces an extremely rapid vibration of a steel rod, and this rod of piston is so adapted to a set of magnets that the mechanical energy of the vibration is converted into elec-tricity. Fly wheels and governing balls and eccentrics and valves and all the rest of the complicated mechanism re-quired for the purpose of control or reg-ulation are done away with. The steam cylinder with its piston is the only thing that does the work about a steam engine. All the rest take energy, but produce nothing, so if they

about a steam engine. All the rest take energy, but produce nothing, so if they can be done away with the energy oscil-lator does away with the energy oscil-lator does away with them. The os-cillator converts the energy of steam into electricity directly. It would ap-pear that this invention, if it does all that it promises, will revolutionize all business that requires energy in the form of steam or electric force to ope-rate it. The machine doesn't take up one-tenth of the room needed by an ordinary engine and dynamo. Probably the oscillator and the new system of lighting would both have been in use long ago had it not been for the destruction of Tesla's laboratory last year. He had these and other in-ventions very near completion. He had in his workshop the result of years of work. He had many models of ma-chinery that he could not replace. All the mode that he do the doesn't and the new

chinery that he could not replace. All the work that had been done in making these things had to be done over again. He said himself at the time that a mil-lion dollars could not repay the loss. WITH THE X-RAY.

Tesla's work with the Roentgen ray photography and the results he has ac-complished have been more interesting than the work and results done and accomplished by any other experimenter. His first published statement of what he had been doing was months after the discovery of the photography. He had experimented in the meantime inces-santly. His picture and his statement were printed in the Electrical Review. He succeeded in taking the picture of the shoulder of a man showing the rib: and shoulder and upper arm bones. It was taken through clothing and a board

was the information of the solution of the sol is clearly visible. In a plate of a rab-bit, under exposure of an hour, not only every detail of the skeleton is visible. but likewise a clear outline of the ab dominal cavity and the location of the lungs, the fur, and many other fea-tures. Prints of even large birds show

the feathers quite distinctly. "Clear shadows of the bones of hu-"Clear shadows of the bones of hu-man limbs are obtained by exposures ranging from a quarter of an hour to an hour, and some plates have shown such an amount of detail that it is al-most impossible to believe that we have to deal with shadows only. For in-stance, a picture of a foot with a shoe on it was taken, and every fold of the leather, trougen, stocking, etc. is visileather, trousers, stocking, etc., is visi-ble, while the flesh and bones stand out sharply. Through the body of the experimenter the shadows of small but-tons and like objects are quickly ob-tained, while with an exposure of from

one to one and a half hours the ribs shoulder bones, and the bones of the upper arm appear clearly, as is shown in the annexed print. It is now demon-strated beyond any doubt that small metallic objects or bony or chalky deposits can be infallibly detected in any part of the body. "An outline of the skull is casily obtained with an exposure of twenty to forty minutes. In one instance an exposure of forty minutes gave clearly not only the outline, but the cavity of the eye, the chin, the cheek and nasal

bones, the lower jaw and connections to the upper one, the vertebral column and connections to the skull, the flesh, and even the hair. By exposing the head to a powerful radiation strange effects have been noted. For instance, I find that there is a tendency to sleep,

and the time seems to pass away quick-ly. There is a general soothing effect, and I have feit a sensation of warmth in the upper part of the head. An as-sistant independently confirmed the tendency to sleep and a quick lapse of time. Should these memory of a sector ne. Should these remarkable effects

EDUCATION AND MARRIAGE.

Incompatible.

Paderewski's American Earnings Were at This Rate.

REVIEW OF HIS RECENT TOUR

Phenomenal Financial Success of Fou Concerts in One Week. Two in Chicago and Two in St. Lonis. His Future Plaus.

Paderewski left America the other had been as the second and the second his colleagues, the entire receipts of the two concerts were handed over to the tune of \$10,000. If we may believe the Sun, his recent concert tour, last-ing over three months, yielded in gross profits \$247,000, and the pianists share of it was 30 per cent. Of the series of con-certs given by him over the country, the most extraordinary results were achieved during the week commencing January 13. That week tour concerts them. He is a very good business man but he is generous to every one with but he is generous to every one with whom he comes in contact. "Paderewski was never indignant over the story that he had been helped when a young man by Mme. Modjeska. The story was not true, and his secre-tary denied it, but Mme. Modjeska and January 13. That week four concerts were given, two in Chicago and two in St. Louis. The first concert in Chicago at the Auditorium on Monday evening he are great friends, and only a day of two before he left San Francisco h received from her a long and friendly letter. Count Bozenta, her husband, told the truth in the matter the other netted \$5,099, and the second, on Wed-nesday afternoon, yielded \$7,382. The two concerts given that week in St. day when he said that his wife had Louis, on Thursday and Saturday. yielded respectively \$3.819 and \$4.776. been among the first to recognize Pad-erewski's genius and have confidence in him, and that was true. When we passed throuth San Jose she was ex-pected to arrive here on the next day. yielded respectively \$3,819 and \$4,76, making for the week a total of more than \$21,000. Out of this there were to be paid the expenses of the concerts, which were not great. The great plan-ist was accompanied only by his man-ager. John C. Fryer, his secretary, Hugo Goerlitz, and a plano tuner from Steinway's who looked after the tuning of the instruments in the towns in which Paderewski played. So it will be seen that the tour was not attended yielded and if it had been possible we should have waited over to see her." Paderewski always smiles when asked about the enthusiasm of the wo be seen that the tour was not attended with any great expense. Even Patti, whose earnings never reached the figwoman, middle aged and handsomely dressed, rose from her seat and, walk Paderewski's, is compelled to carry with her a more or less numerous company of singers and orchestra, but the planist was supported only by his

Mr. Fryer and other men who are in-Air. Fryer and other men who we was a terested and informed in the business of music find the phenomenal success of this tour more surprising from the fact that it depended upon the plano recital, which is regarded today as the most difficult possible form of musical cital. Before the end of the programm entertainment to make profitable. The experience has been both here and in other cities of the country that the other cities of the country that the recital has failed to attract even dead-heads. To see a man in a frock coat sit down at a plano and play for two hours or more is a form of direction which even the most musically inclined people are not any longer inclined to frequent. But in spite of the task of taste for this style of performance, the success of Paderewski, the phenomenal and unprecedented financial success, as well as the hysterical furor that he has achieved, has been accomplished only by the means of his own genius, his personality and his plano.

instrument.

ONE DISAPPOINTMENT.

In only one city did Paderowski con-In only one city did Paderowski con-fess to a feeling of disappointment. He is very sensitive to the attitude of an audience, and quick to detect any failure to respond to his efforts. This happened in New Orleans, where the attendance was large, but at the con-clusion of his concert there the planist said that he realized his hearers had not been appreciative of what he had struggied to do. This was a unique experience during his tour, and New Orleans, which was one of the few southern cities that supported Walter Damrosch's opera company, and has boutnern cities that supported waiter Damrosch's opera company, and has for years had a regular opera of its own, was the one town in the United States which withheld from Paderewski the fervent approval that he had found in other places. Persons who are familiar with the situation concluded that New Orleans concentrated its in-terest in music in the opera, and that outside of that field its interest was slight. Louisville, a southern city notorious for its indifference to music, greated Paderewski with an immense



HIS OTHER REIGN OF TERROR

A GENEROUS ACT. "It was in San Francisco that Pad erewski heard that Marsick, the Frenci Need of X Rays to Photograph No Mis Inner Self-His Birth and vielinist who is playing in this country this year, had had an unsuccessful sea-son and was in Denver in rather em-Training-Resson of son and was in Denver in rather em-barrassed circumstances. He tele-graphed to Marsick to come to San Francisco, and he appeared with him at a recital. The receipts were \$3,200, and Paderewski handed every cent of it over to the violinist. When he ap-peared lately in New York with two of

Promotion. From the New York Press. If the past may be taken as a criteron of the future, the reign of terror

that Cuba will now see is more than likely to be unsurpassed in the annals of the nineteenth century. Even the savagery of the "unspeakable Turk" and the crime of Armenia stand out in and the crime of Armenia statu of the no darker colors than do Weyler's deeds in the Cuba of '69 and '70. The procla-mations this steely, devil-prompted military man just issued appear inno-cent enough as black words on white paper, but their purport it is easy to see. Much more terrible are they than the proclamation of Valmaseda in 1869, against the brutality of which no less a personage than Hamilton Fish, then American Secretary of State, protested. The real significance of Weyler's orders is that any man or woman he pleases can and will be killed without a trial's formality, without the chance of a word in defense. They mean a campaign of unprecedented assassination and butchery all over the island. Should Weyler fail in his attempt to subdue Cuba, Spain's final chance is gone, for this flower of all her generals

men who go to hear him play. The mos embarrassing case of this happened in s in himself her last hope. Never, look at the situation coolly, was a last Boston. When he was playing there hope placed in better hands. Neither pity nor mercy does the new captain general ever feel or has he ever felt. ing down to the front of the orchestra walked up the steps that led to the stage. She stepped over to where the Pitiless, cold, an exterminator of men-that has been his record since the first day he left school and became a young officer mad to stain his hands with blood. plano stood, and, taking her place just at the side of the planist, remained there quietly throughout the whole re-

WEYLER AS HE IS.

was reached so many other women had followed her example that the stage was crowded, and it was with difficulty His personality is extraordinarily ineresting, because in his carriage and in the very lines of his face his every that the planist elbowed his way through the crowd. In one place a gir In the very lines of his face his every thought and every emotion are plc-tured. There is no need of X rays to photograph on some luminous plate his inner consciousness and his de-sires. for not an emotion is hidden. Fifty-seven years of age this winter, his life has been one great pageant of military triumphs. Never once has the man failed in anything he has un-dertaken. Step by step he has climbed up the ladder of rank, beginning as a boyish young captain, until now he stands at the head of armed Spain. Few, if any, of the great commanders who was delayed in getting to her place told the usher that unless he seated her immediately she would shout "Fire!" and put an end to the whole concert. In Salt Lake City he received a request to join the Mormon church, along with a catechism and the articles of faith. Doubtless Paderewski would have to become a Mormon if he wanted to make any matrimonial arrangement that would satisfy his admirers. Few, if any, of the great commander Few, if any, of the great commanders of history have been men of large stat-ure. "The Butcher" kceps well within this rule. Of only medium height, he is broad-shouldered, stockily built and muscular. His face is a remarkable study in itself. The head is large, and all its features prominent Sparse Paderewski never twice played the same programme on his tour. He used always to say that he had two pro-grammes in his mind when he was practicing. He never went to the the-ater in which he appeared before the concerts, as the tuner from Steinway's all its features prominent. Sparse, once dark hair, now turning to an iron who accompanied him on the trip knew gray, meets a broad, receding forehead. There are tense and sharp lines and furrows just over the bridge of the well enough how to have the plano in condition for him. He was usually nervous before the concerts, and on las nose, the most prominent feature of the face. Shrewd, cold, glinting eyes Saturday, when he played here for the last time, he was especially nervous. "I always know, wherever I am." he are set far back in their sockets, un-

der bushy eyebrows. The nose is strong and masterful. A broad, thin-lipped mouth is not all hidden by the said to Mr. Fryer, "that there are a hundred or more people in the house just waiting to catch me in some misthin mustache that is supplemented by luxurious, well-cropped side whiskers, also tinged with gray and framing in The close of the concerts always finds the hard and stern chin. Masterful alone is this square set chin, smooth shaven, save for a little tuft just under the lower lip, of that sort that the French denominate as a "barbiche." It is the chin and the more, the long upper lin and the furthers in

HIS BIRTH AND CAREER.

Most marvelous, even in these days

Cuba has been the pivot, the one essen-tial crucial point of Weyler's fortunes,

the great stamping ground whereon he has made mark after mark. In Cuba he went as a boy soldier to get his first

military experience. In Cuba a man with the first bloom of youth all gone--this in 1569-he made himself the most

wonderful junior officer of the time, Now, once again in Cuba, he is filling

EXPLOITS IN THE INDIES.

The young officer did so well in Cuba in the late '50's that he was sent to San Domingo, on which island he per-

the center of the stage.

Indies.

him completely prostrated. Paderewski has only one engagement to play in Europe, and after that for a long time he will rest and devote himself to composition. He will play at the Philharmonic concert in London in June a Scottish fantasic written for the long upper lip and the furrows in the forehead, just over the eyes, that are the characteristics of this man's him by Sir Alexander Mackenzle, prin-cipal of the Royal Academy of Music in London and conductor of the Philface. Taken altogether, or taken sin-gly, they set forth the cruelty of his nature in unmistakable terms. There harmonic society there. The summer he will spend in southern France, and his particular desire is to retire for a

to be known as one of the very best officers in the Spanish possessions, and when, a few years later, the Cubany attempted to establish a republic and orders came out from Spain, supple-mented by transports filled with troops, to put down the insurgents, Count Val-maseda, the general in command, ap-pointed Weyler general of one of the flying columns of his battalions, as-signing him to the eastern part of the Province of Cantiago, a district that-needed a cool head and a cruel hand. How well Valeriano Weyler Nicol-au learned his lessons of military bru-tishness under the tuition of the in-buman Valmaseda-if indeed anyone was ever able to teach "The Butcher" anything in the way of fiendishness that he did not already know-may be judged from the fact that Valmaseda judged from the fact that Valimaseda considered him his best general and the most promising officer of young Spain. In the few years Weyler spent in doing more than his part to render Cuba a waste and blot out her inhabi-Cuba a waste and blot out her inhabi-tants he was meanwhile adding to his, repute and importance at Madrid. Nor sooner was the rebellion finally sup-pressed than he found himself pre-ferred, as were few others, for promo-tion. The crown knew it had found, the right man to decimate and torture. During the years that followed hard-ly a month passed that Weyler did not distinguish himself in some manner. With his secret ideal the famous Duke of Alva, who headed the Spanish cam-paign in the Low Countries over 300 years ago, once there establishing his Council of Blood, and killing with grim, iaughter that he might confiscate for his master. Philip of Spain, "The Butcher" made himself a modern Alva with wonderful fidelity. The Spanish government sent him off to the Philip-pine Islands to quell an insurrection. government sent him off to the Philip-pine Islands to quell an insurrection, and he covered those bits of territory out in the China sea with fountains of blood, returning successful beyond the hopes of the Cortes. This last great exploit of his was in 1889. Since then he has been living quietly in Spain in command of one off the divisions of the Spanish arms at

quietly in Spain in command of one of the divisions of the Spanish army at a home, resting on his laurels, but with his prestige growing greater each year. When it was seen that Campos coulds not put down the present insurrection. the entire country's thoughts turned at once to Weyler, "The Butcher," and it was the word among diplomats on ev-ery hand that he was the one man wha could terrorize and force to her kness. the Cuba of revolt.

THEY WOULD KILL HIM.

With his headquarters in Havana, Valeriano Weyler is plotting day by day for his great strategic moves. One for his great strategic moves. One thing, and one thing only. Spain seems to fear-that before he canb ring his) clushrng machinery of death in every will die by an assassin's builte or das-ger. With the helmsman struck down, failure would be almost inevitable. There is no small likelihood of this, for there are thousands of men in Cuba today today who would gladly sacrifice-thely lives for the surgeous billion their lives for the purpose of killing this man. They would do this in the remembrance of the outrages and indignities their mothers or wives, perhaps even their children, suffered a quarter. of a century ago at Weyler's hands. For the most horrible thing about this man's campaigning, and that which is striking terror through Cuba, is that it is not alone the insurgents that suffer under his rule, but the innocent and helpless as well. Incarnate savagery is the only de-

scription. Bestial, sensual cruelty are but faint words to describe what these men remember. And the Weyler of today, it is feared, is worse, immeasur-ably worse, than the Weyler of 1870, who was to some extent restrained be cause he was not in complete command. Now there is nothing to prevent his carnal, animal brain from running riot with itself in inventing tortures and infamies of bloody debauchery, which he will dignify under the comprehen-sive title of "Martial Law."



the Sun reporter, he mentioned fourth the perfecting of an apparatus for the production of electric vibrations; fifth, the production of light without any carbon such as is required in the ordin-ary incandescent lamp. Light is pro-duced by the help of electrical vibra-tion. By the method proposed 200 times the light can be had with the same power. Sixth, he mentioned the evolution of the oscillator, a work on which he has been engaged five or six years and which is about ready to he

which he has been engaged five or six years and which is about ready to be put into general use. Tesia says: "Of the energy that goes to the mak-ing of electric light 95 per cent. is wast-ed. The oscillator saves energy. It is the steam engine and the dynamo com-bined and in use it means the saving of the energy that is now wasted."

PROBLEMS STUDIED.

Of the problems he has worked on Tesia said: "They affect humanity as a whole." The energy that is wasted must be saved, he said. He spoke of utilization of the power of Niagara Falls and of its possibilities and the possibilities in nature elsewhere. He said the existing faults of society could

Tesia is a man of striking person-ality. He is unusually tall and is thin. His head is large and is crowned with jet-black hair. His manner is quick and impulsive. In speech he is earn-est. He wastes few words. His whole hearing impresses one with the fact that he is a man of action. He is only 39 years old. He was born in Smiljou, Lika, a borderland region of Austria-Hungary, of the Serbrian race. His father was a clergyman in the Greek church. His mother was a genius with a knack of invention. Tesla got his early education at Gospich in a public school, and later spent three years in the Hhigher Real Schule at Carstatt, Croatia. He saw his first steam en-gine while at the latter school. He inherited his mother's knack of inven-tion, and when he left school in 1873 he went to experimenting with electricity against the wish of his father, wh wanted him to enter the ministry. That was out of the question, and then his father wanted him to become a college college professor of mathematics and physics and with that purpose sent him to the Polytechnic school at Gratz.

Polytechnic school at Gratz. In this school there was a gramme dynamo, and Tesla got the notion into his head that a dynamo could be ope-rated without commutator or brushes, such as this one was equipped with, and he began work then and there on the ideas that later developed one of the carbon heretofore needed is expensuch as this one was equipped with, the ideas that later developed one of his great inventions, a rotating field sive. This apparatus is nearing perfec-

which he met many Americans, who told him of opportunities in his field of investigation here, he came to Amer-ica. He hunted out Thomas A. Edi-

son, and went to work in his labora-tory. In Thomas Commerford Martin's book. "The Inventions, Researches, and Writings of Eesla," Tesla's connection with Barbara and the dual the dynamos in the world ith Edison is mentioned, and the au-are operated by steam power. Every are says:

thor says: "It was impossible,however, that with his own ideas to,carry out, and his own inventions to develop. Mr. Tesla could long remain in even the most delightful employ; and his work now attracting attention he left the Edison ranks to join a company intended to make and sell an arc lighting system based on some of his inventions in that branch of the art. With unceasing dilgence he brought the system to perfection, and saw it placed on the market. But the

leges, 680 are now engaged in teaching, and of the rest 11 are doctors or pre-paring to be doctors and medical missionaries, two are nurses, eight or nine are in government employment, one is a bookbinder, one is a market gardener and one is a lawyer.

> When Baby was sick, we gave her Castoria, When she was a Child, she cried for Castoria, When she became Miss, she clung to Castoria. When she had Children, she gave them Castoria

be verified by men with keener sense of observation, I shall still more firmaudience and the customary enthusiasm. "We traveled in a private car," Mr.

Fryer said to the Sun reporter. "Pad-erewski, Mr. Goerlitz, Mr. Fischer, and myself, and most of the time we lived streams penetrating these strange ap-it may be possible by these strange ap-pliances to project a suitable chemical into any part of the body. "Roentgen advanced modestly his re-suits, warning against too much hope, Fortunately his apprehensions were groundless, for, although we have to all appearance to deal with mere shatime he seems able to sleep is when others are beginning to wake up. He never partakes of anything on the day of his recitals beyond a cup of tea, which he takes in the morning. "He still smokes Russian cigarettes

as incessantly as ever, and in the ab-sence of any opportunity to play pool or billiards Paderewski devoted himor billiards Paderewski devoted him-self to whist. So after the concerts, when we went back to the car, dinner would be ready, and we usually sat down at about 11. Paderewski put the hour off as long as possible, so that he might have a good oppetite when the time came. We always made it a point to have the best things of the region we happened to be in and as the cook was happened to be in, and as the cook was an excellent one. Paderewski said that he had never lived better in his life.

DOWN TO BUSINESS.

"After dinner the day really began We played whist regularly every night, and it was a bad thing for the man in the party who happened to play care-lessly or make a mistake. Paderewski plays spiendidly, and he was not dis-posed to be tolerant of anybody who didn't devote all bla attention to the didn't devote all his attention to the game. Usually between 3 or 4 o'clock he would say that he thought he might be able to get to sleep, and we broke up. But often when I saw him the next morning he would tell me that after all he had succeeded in sleeping only for an hour or two. He devoted six or seven hours regularly to practice every dry, but he managed to see something of the towns we visited, and the west in particular interested him greatly.

According to the latest statistics, out of a total of 1,486 students from Girton. Newnham, Somerville Hall, Holloway college and Alexandra college, whose subsequent careers have been traced, 1.278 have never been married, that is, there is no second to the towns we visited, and the west in particular interested him greatly. "It was a surprise to me as much as it was to him, to see the audiences that turned out in the small towns. Think of giving a concert in Houston, Tex., a pinno recital at that, and having an a plano recital at that, and having an audience that represented \$2,900! Often I would tell him the figures, and he would say that it must be a mistake, there could not be so many people in a small town who wanted to see him. In San Antonio, too, where he was par-ticularly interested in the Mexican influences, the audience that turned out represented \$2,500. Of course, the peo-ple did not come only from the town. but from all the region around, and the enthusiasm of the people everywhere was great. I don't suppose for instance that ever before there was any audi-ence in San Antonio that represented more than a fifth of that sum. But the thing that drew them to hear Paderew-ski was only a piano, and the man who

played it. "From my own experience, I am pre-pared to say that on his return visits to this country the desire to see him will be just as great. It is not a fad that will decline, for in every instance in the small towns in which these great audiences gathered the enthusiasm of the people was greatest at the end of the performance. "In San Francisco, where he gave

ten recitals, Paderewski saw China-town several times, and he was partic-ularly interested in the Chinese music. Several times he went to hear it, and as Several times he went to hear it, and as he went about with an interpreter who had access to all the resorts, there were few phases of Chinese life there that he did not see. "The porter on the parlor car would

have done anything for him, and every-body connected with his business here down to the man who moved his plano to the stage from the dray had reason to remember his generosity when he left this country. They are all eager to see him back, too.

"It was in San Francisco that he had

statement of his plans to a reporter of a Vestern paper:

FUTURE PLANS.

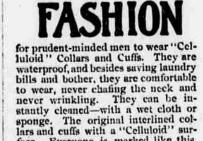
"I will make my home in Paris, as "I will make my home in Paris, as heretofore. However, after the pro-duction of my opera I hope to travel for pleasure in the Orient. When I have no concerts I rise early and take a long walk, and then practice for an hour or two. After breakfast I play a game of billiards and then work upon my compositions until dinner. After game of billiards and then work upon my compositions until dinner. After that I again play billiards until bed-time. Yes, I am very fond of playing billiards. It is my hobby." In reply to the question, What is the comparative standard of musical ap-preciation between different countries, the artist said:

he artist said:

of kindliness that might at one time have found stray lodgment away, never to get a foothold again. "In all the countries that I have vis-ited the appreciation of the educated is alike. England is far ahead of any is alike. Engine is far aneae of any other country in oratorio and ballad music. Boston, New York and Chicago rang as high, if not higher, in orches-tral music than any European capital. Chicago has developed a remarkable musical appreciation within the last of individual triumphs, has been the career of this Spanish bully. Especial-ly remarkable has been the course he nas run, when it comes to be considnas run, when it comes to be consid-ered that he is not a Spaniard of pure race. The old Hidalgo blood does not flow unrestricted and unmixed through his veins; it is diluted and mingled with that of another and an allen people. four years. I attribute this chiefly to the fine work of the Chicago orchestra under Mr. Thomas. Chicago can boast of one of the finest concert halls in the world. To my mind there exists no What makes it even worse, when Span-ish traditions and pride of descent are argued, it is on his paternal side that this intermixture of blood comes. By descent Weyler is a Prussian, as his name indicates, only of Spanish anconcert hall of the size of the Auditorlum with the same acoustic properties." Paderewski had his plano in his stateroom on the Teutonic as usual.

There seems at present no doubt that he will return here year after next. His opera, of which two acts are fincestry on his mother's side. Yet so aggressive and so successful in all he ished, will probably be given first in Dresden. Its scene is laid in the Carhas undertaken has "The Butcher' been, that even in the peninsula of proud and haughty Don his lack of rathian Mountains and the story is if gypsy life. spanish family has been forgiven and







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is no opportunity for misapprehension, no dailying with the facts. Sensual, shrewd, murderous, both because of the power of relentless ambition and because the man likes to be cruel, Wey-ler shows himself in every lineament. His military coat bears upon it every honor, every cross and every badge known in Spain, save those set apart for those of royal blood. But not even these glistening insignia soften or relieve for a moment the savage face above. Time, indeed, has made that face more set and more merciless than ever before. The brutalities its owner has planned and executed have all left their traces there, forcing every gleam

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