

THE BATTLE WON.

CHAPTER XXV.

NICHOLS' SCHEME A FAILURE.

"Oh, look here, chummy, here's a letter for you!" said Mrs. Redmond to Nessa one morning when they met in the breakfast room.

Nessa took the letter and examined the outside curiously. She had never seen one like it before. It was particularly small; the edges were gilt; there was a coronet in the left-hand corner with a complicated monogram below, which was in itself as good as a conundrum; and it was addressed to Miss Viola Dancaster.

"There's no postage stamp. Do you think it's an advertisement?" she asked.

"What a question! If you had been in society, you would know better. Don't you see the coronet? It's from some person of title, of course."

"Oh, I see! The coronet is like the label on a bottle of pickles—without which none are genuine!"

"It's horrid bad form to sneer at the aristocracy," Mrs. Redmond observed, in a tone of disgust, as if her own position had been assailed.

"Sneer at them!" exclaimed Nessa. "I couldn't. I love the whole ten thousand, especially when they send me such sweet little letters. How did it come?" With a pair of scissors she cut the end of the envelope and drew out the enclosure as she spoke.

"I found it in your bouquet."

"Which?"

"The Blue and White."

The information was lost upon Nessa, whose attention was concentrated in the diminutive sheet of crabbled handwriting.

"It's an offer of marriage!" she exclaimed, coming to the end. "Hand and fortune, she read going over it again; he doesn't say anything about his heart, and I cannot make out the man's name. Where did you say it came from?"

"The Blue and White bouquet; it fell out of my feet."

"Then it must be that dreadful young man in the box who makes such a noodle of himself every night."

"I don't know why you speak disrespectfully of Lord Carrickbairn. It isn't every girl in your position who receives such a compliment from a Scotch peer."

"But unfortunately his name doesn't prevent him being very silly. Every night he is there with his enormous bouquet, and I don't think I can be accused of encouraging him."

"If you came in the canteen like the rest, and weren't such a touch-me-not young person he might express himself in some other way. What does he say?"

Nessa handed the letter. She didn't know whether to laugh or be serious. In her heart she felt flattered, as most girls do by proofs of admiration, no matter how crazy the admirers show themselves to be.

"Fancy sending an offer of marriage in a bouquet!" she murmured.

"Oh, my dear, I've had hundreds of them sent in that way. If I had accepted all the offers—I mean some of the offers—I might have had a title. He implores you to give him an interview. Of course you will see him."

"I shall do nothing of the kind," Nessa replied, with quiet dignity.

"Good gracious! Why not?"

"Because I don't feel that I ought to."

"But don't you see that this letter fixes him? It's an offer of marriage."

"The greater reason for refusing an interview. I don't intend to marry."

"What nonsense! Why, he is a peer, and has ever so much money."

"And ever so little brains."

Mrs. Redmond turned her shoulder impatiently.

"But even if his wisdom were in proportion with his wealth and position," continued Nessa, "I would not marry him."

"Why?"

"Because I have not the slightest feeling of love for this gentleman."

"That means that you have for some other—some fellow in the company, I suppose?"

Nessa was accustomed to rudeness from this woman; but it was by an effort that she replied, quietly—

"No, I have no love for any gentleman in the company."

"Then what difference does it make whether you marry Lord Carrickbairn or not?"

"I should think it would make a great deal of difference to him whether I loved him or not."

"Oh, that's his look out. He doesn't ask you to love him; he asks you to be his wife."

Nessa made no reply. Silence always exasperated Mrs. Redmond.

"Look here," she said, "you'd better think this over. It's a chance you may not get again. You think it will be all right when you're twenty-one. But there's many a slip—'you know; and I bet ten to one you'll never get a penny of your fortune—Redmond will find some means to do you out of it—and then where will you be? After all, what are you? A favourite because you've got good teeth and eyes and a decent figure. But how long are you going to keep your looks, and what will you be when you've lost 'em? A young woman who got her living by riding in a circus. Why, if a tradesman married you, he'd have to hush that up."

"I could not have thought of a better reason for not marrying Lord Carrickbairn."

"Oh, bother your stage answers," said Mrs. Redmond, whose repartee was not of a delicate kind. "Can't you say plain out what you mean?"

"Yes, I daresay I can if I try," replied Nessa, pleasantly, her good nature overcoming a sense of irritation. "I mean this; that when I marry it will be because I can't help marrying—just from such irresistible impulse as has governed my actions always. When I feel that I must marry, I shall marry; but not till then. Even then I may not be right; but, surely, it will be better than to do that which I feel must be wrong. It would be wrong to take advantage of this offer that has been made to me. Why? What does Lord Carrickbairn know of me? Nothing but what he has seen under the lights of the show. He is pleased, like the rest of the crowd, with my eyes and my teeth and my figure, as you say; but when he sees nothing in me to admire and recognises me only as a girl who earned her living in a circus, he will be heartily glad," Mrs. Redmond turned aside with an impatient exclamation, "that he is not obliged to own me for his wife. But quite apart from that consideration,"

continued Nessa after a moment's reflection, "and looking at it only from a self-interested point of view, why should I marry him or any one else? I don't want a husband. All my heart and soul is in my business. I couldn't be bothered with him. I think that is why I never feel in love with any single one—because all my feelings are given to so many. I love all the audience, and my sole thought is to win their admiration and receive their homage. It's the passion of my life. If I heard that all my fortune was lost—gone forever—I shouldn't feel one moment's regret, so far as my own loss was concerned. And as for position, I know none in the world that I would change for one generous outburst of applause."

"That's all very fine for you," said Mrs. Redmond; "but how about me? You mayn't want money, but I do. You don't seem to remember the sacrifice I've made, and all that I've done, to get you out of the scrape your irresistible impulse got you into." She underlined the words with a sneer or whatever you like to call it.

Nessa was no longer under a delusion with regard to the sacrifice that had been made for her. She knew the woman, being herself a woman now. She believed still that Mrs. Redmond had saved her life, and in that, but nothing more, she felt indebted to her. For a moment she looked at this coarse, pretentious friend in silence with something like pity in her face, and then she said, in her low, calm tone—

"Yes, I do remember all that you have done for me. But if I married Lord Carrickbairn to compensate you for saving my life, you would be my debtor as long as I lived."

"Oh, I shouldn't feel the debt much more than you do perhaps," replied the lady, turning away with a sniff of contempt and walking out of the room.

Nessa sat in meditation, with her hands folded in her lap until the door opened and Mrs. Redmond came in to look for something. The expression of blank unconsciousness in her face indicated a settled determination for the protracted sulk to which fat women of mean birth seem peculiarly addicted.

"I have been thinking about what you said," said Nessa, meditatively, still seated with her hands in her lap by the window, "and it seems to me that I have done wrong in neglecting an opportunity of providing for the future simply because I myself feel no need of money. I ought to have remembered how much your happiness depends upon it."

Here was a surrender! Mrs. Redmond was so taken by surprise that she could do nothing for a moment. But she forgot all about her sulk, and in the succeeding flush of exultation ran to the girl's side and caressed her fondly.

"You dear, unselfish, naughty little chummy!" she exclaimed, with a kiss between each word. "I knew you would see what was square and straight. So you will see Lord Carrickbairn?"

"Oh, dear no, said Nessa, decided; "there was now need to think twice about that. It is my own fortune, not his, that I intend to secure."

Mrs. Redmond's caressing hand relaxed and slipped inch by inch from Nessa's neck as she listened.

"There is a gentleman—a barrister or a judge, some one very powerful in the law—who made an offer through Mr. Ferguson to take up my case and protect my estate from confiscation if I would accept his services." She narrated what had taken place on this occasion.

"You never said a word about this to me," said Mrs. Redmond, sharply.

"No; as I declined to acknowledge that I was Vanessa Grahame I did not think it worth while to talk about it."

"Why did you refuse?"

"I did not think there was any necessity to take legal proceedings for one thing," Nessa replied. She might have added that her chief reason was a wish to spare Mrs. Redmond the shame of having her husband's villainy made public, but she kept that reason secret with persistent delicacy. "It seemed to me impossible that I could be robbed of my estate, but now that you tell me it is most probable that I shall lose all I feel that I ought to avail myself of this gentleman's offer."

"What could he do?"

"I suppose he would take action at once against Mr. Redmond for attempting to—murder me. That, I am afraid, would necessitate your being called as a witness. But your evidence would surely convict him, and secure the estate at once."

Mrs. Redmond's hand slipped from Nessa's shoulder as if it had been a hand of lead. The prospect of being put into a witness-box to face her husband chilled her to the marrow; for she knew that he would say, "That woman's place is here beside me, in the dock; for it was she who planned the murder and did the work where my hands failed. She drugged the girl. Let the doctor be called to prove my words." The woman was panic-stricken at the idea.

"No, no—you mustn't—you mustn't do that!" she cried, dropping in a chair. She dared not look Nessa in the face for fear her own might betray her guilt and complicity in the attempted crime. "You mustn't do that," she repeated, with a faltering voice; "don't take any notice of me. I'm upset. I can't tell you why."

"The reason is clear enough," said Nessa, kindly. "Mr. Redmond is still your husband."

"Yes, that's it—that's it, dear little chummy," the woman said, eagerly, catching at the excuse gratefully; "he's still my husband. I couldn't give evidence that might ruin him for ever. You must forget what I said. I exaggerated. He couldn't touch your estate. Promise me you won't speak to that man—the barrister or Ferguson or anyone about this. You won't take legal proceedings—promise me."

"With all my heart I give you the promise. I have said already that, so far as I am concerned, I do not wish to take any steps against him."

"Thank you! Thank you, chummy!" said Mrs. Redmond, humbly, pressing the girl's warm fingers in her cold, clammy hand.

CHAPTER XXVI.

ANOTHER TRIUMPH.

Mrs. Redmond knew that barrister well enough by reputation and by sight. She had always feared and disliked him, and instinctively felt that he disliked her. He had a way of piercing her with his eye with evi-

dent enjoyment in the discomfort she experienced. He seemed to be saying to himself, "You've done something wrong in your time, my friend, and I'd get it out of you in five minutes if I had you under cross examination!" She dreaded him more than ever now, and if peeping through the curtained doors of the canteen she saw him in there she would abstain from going in. She suspected Nessa of secretly communicating with him. The discovery of her own complicity in Redmond's crime must always be possible while Nessa lived. The fertile imagination of Mr. Nichols could not have devised a stronger incentive to the fulfilment of his purpose.

Meanwhile, week by week the greedy woman had to deny herself some luxury in order to send the five pounds to her husband. It was now more than ever necessary to keep him out of sight, but she begrudged the money none the less that paid for his retirement. The fear of justice was constantly on her mind; the necessity of scraping the weekly payment together continually presented itself. The burden every day became more intolerable. And while existence for her was growing unendurable, Nessa was finding fresh pleasures to add to her enjoyment of life. Nothing was wanting to stir up her venomous passion and goad her on to desperation.

A new spectacle was prepared by the ballet master, and put up for rehearsal after Christmas. As soon as the holiday audience began to fall off, the boardings were placarded with new bills.

OLYMPIC GAMES.

PRIZE OF ONE HUNDRED POUNDS. A prize of one hundred pounds is offered to any competitor who shall win the prize of Skill and Beauty in

THE OLYMPIC GAMES.

at the International. The competition is open to every one without exception, submitting, of course, to the same regulations observed by the paid members of the International Company."

This announcement was daubed on each side by scrolls in blue and white—Nessa's well known colors—on which were printed, in large letters—"Irene wins!"

"The company backs Irene (Miss Viola Dancaster) against the whole world, for one hundred pounds at each representation."

On the first Monday in February the spectacle was produced. Scene painters and carpenters had been at work for weeks, and during Sunday they had got up cloths and battens which gave to that part of the building occupied by the audience the aspect of a Roman amphitheatre—nearly enough for an entertainment in which anomalies and anachronisms met you at every point. At one end of the auditorium half a dozen private boxes had been cleared away to make place for a flight of steps leading to the benches for the judges, above which rose a chair of gold for the Queen of Skill and Beauty—something of medieval custom being incorporated into the Greco-Roman medley. A light barrier running round the whole arena enclosed a narrow space for the Greek audience. The middle was occupied by a raised dais for wrestling and combats; the space between this and the barrier was divided into two courses by a circuit of tripods, each eighteen feet high, garlanded together: the outer course for the horses; the inner one for chariots and pedestriars.

At half-past seven every seat in the vast building was taken. Money was turned away at the doors, even for the private boxes. They had been secured by Nessa's admiring and their friends long before, for it was known that something quite novel and original was to be produced.

The show began with the entrance of a dozen sandalled and toga'd attendants with lighted wands, who, passing quickly round the course, lit up the censers on the tripods, which threw up a blue flickering flame with good effect, the ordinary lights overhead being turned up simultaneously. A venerable gate-keeper, with a heavy bunch of keys, crossed the arena, and seeing the censers lit, slowly opened the arena gates.

With a burst of joyous laughter and delight, the Greek spectators rushed into the space reserved for them—men, women, and children, old and young, in all sorts of classical costume—helter-skelter; all eager to get a front place at the barrier—some creeping under and crossing the arena to get vacant places on the other side—a touch of realism being added by a father perching his child on the edge of the boxes behind, and by some bare-legged youngsters climbing up and taking possession of the marble balusters behind the judge's bench.

While the crowd is still streaming in there is a flare of martial music, and the soldiers enter, causing the trespassers on the arena to scuttle off in search of a vacant place, to the loud mirth and derision of all those who are in the front row. The soldiers are a fine glittering throng, tolerably Greek in appearance, but carrying Roman standards and eagles and headed by a band whose instruments are unmistakably of the nineteenth century. They are followed by eight chariots bringing the judges, who, alighting at the steps, ascend to take their places on the benches. They are all equally venerable in the whiteness of their long beards and flowing locks. Then comes the whole stud of horses and ponies, each led by a properly-classical groom but not mounted. The procession is closed by a motley crowd of gladiators, dancing girls, javelin men, wrestlers, and others; and by the time the last man has entered, the band, having made the tour of the two courses, have taken their places on the raised dais, and the whole arena is full of glitter and colour. As the march ends, the spectators all round the arena behind the barrier burst into a hymn. This has a striking effect upon the real audience, who themselves seem to be part and parcel of the show.

Meanwhile, the soldiers, dispersing, take up position at regular intervals amongst the crowd within the barrier, their fixed figures and glittering armour standing out well against the varied colours of the hustling mob. The hymn is over, and the boys are shoving forward to see what is to come next. The pause is a fitting opportunity for a round of well-earned applause; for rubbishy though it may be, it is good rubbish as seen from the uncritical point of view of the ordinary spectator.

The band descends from the dais, and Ferguson enters on his thoroughbred in the correct riding costume of to-day. No entreaties could persuade him to bind his brow with a wreath, and assume the chiton for this occasion. He dismounts and ascends the dais; he is going to speak, and it is generally believed that he has to announce that there's a hitch somewhere—Viola Dancaster indisposed, or something of the kind—and every one listens to catch his words.

He begins by blowing his managerial trumpet modestly, and then informs the audience that certain envious detractors have spread the report that the races run in the International have been "squared," and

that one of the objects the company had in view in the production of the new spectacle at such an enormous expense was to prove that, though foreign, the company had that English love of fair play which has ever kept our national sports above reproach. (Loud applause from national sportsmen.) He thereupon repeats, in the name of the management, the challenge already published in the newspapers and public announcements offering a cheque of one hundred pounds to any lady not engaged in the company who shall win the prize for skill and beauty. As none but ladies could compete, it would be taken for granted that all are beautiful, so that the contest resolves itself into a trial of horsemanship. The contest is open to all, subject only to such rules as were provided for the safety of horse and rider. Doubtless amongst that vast audience many professional ladies have been drawn here by curiosity or a spirit of rivalry. The contest is open to them as to all. Every facility will be given them by the attendants to leave their places and enter the arena, and he concludes by wishing that the best horsewoman may win.

The speech is received with enthusiastic applause, in which he remounts and rides out of the arena. In several parts of the building there is a movement, and it is clear that some "outsiders" are determined to try for the £100. The excitement grows as the grooms lead out to the steps a string of twenty saddled horses.

A Greek herald mounts the dais, and after a flourish of trumpets, delivers the challenge to the crowd of Greeks behind the barrier, who respond vociferously. One after the other girls slip under the barrier, and present themselves as competitors; they are led up the steps to the judges, who present each with a bunch of colored ribbon. By the time they have taken their place on the dais, some ladies from the audience have come down into the arena. There are four of them. They receive favours from the judges; but instead of going directly to the dais, they retire to a dressing room prepared for them to put on the regulation costume. A chariot race between men fills up the interim; then the outsiders, coming down into the arena in costume, with their colors, are greeted with a shower of applause, and led to the dais. Once more the herald delivers his challenge, whereupon a girl in pale blue, bordered with white, who has hitherto been lost in the crowd, passes under the barrier at the further end of the arena, and walks into the arena.

A cry bursts from the crowd, and is echoed by the audience above, as she is recognised.

"Irene! Irene!" shout the Greeks. "Viola Dancaster—that's she!" runs through the audience.

The first race is run by the four outsiders alone; the winner is led up the steps and seated in the golden chair above the judges. The next race is run by members of the company, and in this Nessa comes in victorious—winning easily by two lengths. And now the prize is to be contested between the two winners—Nessa and the outsider who won the first race. Fresh horses are brought in, and the lady comes down the steps. The band strikes up, and the enthusiastic Greeks strike up a chant in honour of their favorite, the burden being, "Our Irene wins!"

The outsider mounts the mare led up to the steps; then d'Esperance is brought forward, and Irene takes the saddle. There is a discussion before the starting place, in which Ferguson, who has entered the arena for this heat, takes part. What is the matter? Clearly the outsider is protesting in very vigorous terms. Every one in straining to catch the meaning of it. "She won't run!" "Look, she's going to get off!" "There's some dodge of theirs she's found out!" "Some precious French trick or other!" "Oh, well, that shows it's all a put-up thing. These are the commentaries heard amongst the audience on every side. Something like a decided hiss of disapprobation succeeds the ominous whispering, when Ferguson rides out into the middle, and all are hushed to hear his explanation.

"Ladies and gentlemen," he calls, "the lady who won the first race—the champion of the outsiders, as I may call her, although she is a lady eminent and well known in our profession—refuses to run this heat on the mare provided for her. (Slight applause.) Undoubtedly that mare is inferior to the one allotted to our Miss Viola Dancaster. Unfortunately we have no horse—and it is doubtful if any exists—to match Miss Dancaster's mount. But our Blue and White—our Irene would not be our Irene if she were not as generous as she is plucky. She has offered to change horses and run this race with her rival on the mare her rival has refused, and we, in the interest of fair play, have consented."

"Irene wins!" shouted an excited young gentleman from his box; and then followed such a burst of applause as Nessa dismounted and gave up d'Esperance to her rival, that the very place shook to the storm.

There was a fair start, but it became obvious in the first lap that Nessa was to suffer defeat at last. Mrs. Redmond, though she took no part in the contest, scarcely breathed for the choking sense of exultation as she saw the distance widening between the two riders. There was an unusual and ominous silence as Nessa passed the starting place on the second lap a length behind. But she never lost courage. The mare she rode was the second best in the stud, and had carried her home in triumph many a time. She hoped to recover the lost ground in the next two laps, and, sparing the whip, cried with cheerful encouragement to her mare. Suddenly it became noticeable that the outsider was losing ground; and so she was. But it was no fault of hers: d'Esperance had heard Nessa's voice behind, and become conscious that she was not in the same hands. As she slackened, her rider applied the whip, and the high-tempered animal, who never felt the whip from Nessa's hand, resenting the treatment, swerved from her course and slackened still more. Only when Nessa's mare was neck and neck with her in the third lap, and she was fired to her duty by the roaring of the audience, now mad with excitement, she recovered her temper, and struck out to win. But it was too late they were close to the winning post, and there was no time to get the pace, and for the first time in her record d'Esperance came in second.

Mrs. Redmond bit her lips through in her vexation, and Ferguson himself was astounded. Daprez beckoned him from his box, and a few hurried words were exchanged as the audience thundered peal after peal of applause.

Ferguson once more rode into the middle—hushing the tumult.

He said that, although no member of the

company was entitled to take the prize offered, yet the management felt that a race so nobly won called for a signal mark of approbation, irrespective of the winner's position, and he knew that he should be only responding to the wish of all there in presenting to Miss Dancaster the cheque that had been drawn for a successful rival.

With that he rode across and presented Nessa with the cheque.

Nessa, less conscious of her own triumph than of her rival's defeat, without a moment's hesitation, and absolutely forgetful that she was under the observation of a multitude, turned her horse and put the cheque in the hand of the outsider.

"It's yours!" she said. "You'd have won if d'Esperance had not heard my voice."

"By Jove, I've heard you are a lady; now I know it!" cried the woman, who, being a professional, had no false delicacy about taking the gift; but she knew how to make generous acknowledgment, and, touching d'Esperance with her heel, she trotted round the ring holding up the cheque that all might see the use Nessa had made of it.

Nessa was lifted from her saddle, arrayed in a jewelled robe, crowned with olive, and led to the seat of honour with the band and the throng outlying one the other in her honour.

"By—! she shall be dragged down from that!" muttered Mrs. Redmond, with a furious imprecation.

(TO BE CONTINUED.)

Brazil's New Constitution.

President Fonseca and his government have favored the people of Brazil with an outline of the constitution according to which they propose to govern the country. This draft law, published by decree, is provisionally binding on the Brazilian people until it is amended or repealed by the Congress which is to meet on Nov. 15. It resembles quite closely the organic law of the United States. Like that instrument it provides that the Congress of the Brazilian Union shall have authority to fix the Federal expenses, to contract a national debt and provide for its payment, to regulate international and inter-State commerce to levy duties on foreign goods imported to impose a stamp tax and postal dues, and to control the coinage. But unlike the American law, the Brazilian gives Congress exclusive control of the telegraphs, and exclusive authority to establish banks. It also stipulates that the executive shall not declare war or conclude a treaty of peace without the authority of Congress. Moreover, it differs in limiting the presidential term to six years, and denies that officer re-election. Cabinet ministers are no responsible to the people's representatives, nor are they eligible for the office of President or Vice President. Judges, Federal and State, are appointive, and are to hold office during life or good behavior. Laws passed by the National Congress, like a bill passed by the British Parliament, become *ipso facto* a part of the Constitution, and cannot be declared invalid by any other authority. There is a clean cut between Church and State, the framers of the new constitution evidently desiring to have a purely secular government. Civil marriages are to be compulsory; no Church is to receive any subvention from the State; no cemeteries are to be controlled by any religious sect; no religious teaching is to be permitted in the public schools; no Jesuit is to be suffered to reside in the country, and no new convent or monastic order is to be founded. The right of franchise is restricted by the ability to read and write. Soldiers and clergymen are also disfranchised. Considering the fact that the government owes its existence to the army, this is an astonishing provision. These are the main features of this draft organic law, which, of course, will have much flesh placed upon the skeleton when the work of confirming or modifying comes before the Congress, elected on Nov. 15. How far the law will retain its original features after passing through the impending ordeal, it is impossible to say. Should the soldiers take offence at the way in which their services have been rewarded, and the priests throw in their influence against the government, as they are almost sure to do, it is more than probable that many important and radical changes will be made.

A Ship Railway.

If to discuss were to act the novel spectacle (to Canadians at least) would soon be witnessed an ocean stamship, fully freighted, being conveyed across the country from Lake Ontario to the Georgian Bay. A ship railway is the latest scheme talked of among practical engineers, who claim that the plan is perfectly feasible and that by the expenditure of \$12,000,000 the idea could be realized. Three tracks of the ordinary gauge, laid side by side, would be required. At each end of the road lift locks would be constructed to place the vessel on the carriage, while four turntables at certain points along the route would enable vessels to pass each other. It is estimated that three locomotives would be sufficient to transport a vessel of 2,000 tons weight, including vessel and cargo, or more than 1,000 tons register at the rate of ten miles per hour or seven hours for sixty-six miles. Were the project carried out it would save 428 miles of lake navigation and 28 miles of canal between Chicago and Montreal, enabling a propeller from Chicago to reach Montreal or even Quebec before it could reach Buffalo, and save at least three days between Chicago and the Atlantic seaboard. Besides, it could hardly fail to divert much of the traffic from the railways operating in the Northwestern States to Canadian lines, seeing that the route would offer facilities for the movement of freight incomparably superior to those through American territory. The scheme will probably be brought before the attention of the Dominion parliament next session, when it may be expected a more detailed explanation will be made. Meanwhile, the old project of a Huron-Ontario Ship Canal is abandoned, as being less practicable and twice as expensive as the ship railway.

The Largest Boiler In the World.

What is described in an American mechanical journal as the largest boiler ever built was tested a week or two ago at one of the electric-lighting stations in New York. It is said to be encased in a vertical shell 7 inches thick, and to contain 600 tubes, each of which are 3 inches in diameter. The length of these tubes if stretched out would reach 7200 feet, or very nearly 1½ miles. The whole boiler contains 6000 square feet of heating surface, and is of 1000 horse power.