THE ROMANCE OF A SUMMER.

Jack D'Arcy was a universal favorite, and in that respect he differed considerably from his chief friend, Oliver Westall, and closely resembled Humphrey Standish. Perhaps that was the reason why Humphrey singled him out from among all the other guests at Mr. Campbell's shooting-box as the one whom he chose chiefly to honour with hissociety. However that might be, before they had been a week at Inverarran they were the closest of friends, and felt as if they had known each other all their lives.

"Odd thing, isn't it? how different some people's destinies are from what they ought to be," said Mr. D'Arcy one evening, as he and Humphrey sat talking together in his room after they had retired for the night. "Some people, whom to look at you would say were born for happiness and prosperity, are just the unluckiest beggars on the face of the earth, and *vice versa*. There's a case in point," he went on presently between the whiffs of his cigar, finding that Humphrey did not answer, "in something my friend Westall told me in a letter the other day. He says there's an awfully charming girl staying in the hotel he is at—a perfect marvel of everything that's charming, according to him; indeed, if it weren't old Oliver, I should declare that he was in love with her himself. And now, this priceless paragon, this goddess in human form, is going to marry a wretched old foreign fellow—a Malay, or something of that kind—a chap whom everybody seems frightened of, and whom she herself, according to him, detests, or at anyrate does not care two pins about. Now, what the dickens does a handsome girl—one who could marry whom she chose and when she chose, want to go and tie herself for life to a man who isn't even an Englishman—or even a European, but a wretched Oriental, brimful, doubtless, of deceit and underhand ways? Pah! the thing makes me sick." And he looked very much disgusted.

Humphrey did not say anything. He was thinking of Avice's mother.

"I only knew one Malay," his friend resumed, "and he was a scoundrel. An out-and-outer, I can tell you. His name was Mutwanee, and I never had such a desire to see a fellow-creature hanged as when I was talking to him. He came over in the ship I came from the Cape in, at the beginning of this month—or, rather, it was the end of last. I shouldn't wonder if this were the same fellow," he added, meditatively; "and if so, I pity the girl. He has two or three wives already."

It was growing too late for any more conversation just then; but the next morning, after breakfast, D'Arcy joined Humphrey on his way up-stairs.

"It's the queerest thing I've heard for long," he cried, glancing at an open letter in his hand. "You know that fellow Mutwanee I was talking of last night. Well, it seems that he is the very fellow whom Miss Sacharty is to marry. I wonder her people"——

"*Who* did you say the girl was?" interrupted Humphrey hoarsely, clutching as if for support to the balusters. "Miss who?"

"Sacharty," rejoined the other, startled by his voice and manner; then, catching sight of his white face, he added: "Why, Standish, man, what's up? You look as if you were going to faint!"

But Humphrey by a supreme effort managed in a great degree to regain his self-composure. "I'm all right," he returned. "But, come in here; I want to hear all I can about it."

With a rueful thought of the shooting he would miss, Jack followed his friend into the deserted smoking-room and told him all he knew. It did not amount to much after all, being merely the little scraps in Oliver Westall's letters; but it was enough to draw a low groan of horror from the startled and dismayed Humphrey.

"It is some fiendish plot of her father's," he cried fiercely. "Av—Miss Sacharty could never, never have consented to such a thing of her own free will!" Then, after a moment's pause, he went on more calmly: "Does your friend say whether her aunt knows of it? Is she also in the game?"

"No," returned D'Arcy, glancing at the letters in his hand; "there is nothing about an aunt, only a note that the girl herself is a half-caste.—But if you know the aunt, you might be able, if not to stop the marriage at once, at least to delay it till she comes. And remember, I know for a fact that Mutwanee has at least three or four other wives. There was a fellow on board who knew him very well, and I daresay we could get hold of him somehow as a witness. He knows all his past history."

"Ay," returned Humphrey gravely. "I think then I'll go off to the nearest town and telegraph to Miss Marchmont—fortunately, I know her address—and then I shall be able to decide on my course of action. To-day is Friday, so there is no time to be lost." Then, after a moment's pause, he added penitentially: "I'm afraid I've spoilt your sport for you, old fellow! What a selfish brute you must think me! But you see—I know Miss Sacharty very well, and the thought of her danger:" He broke off abruptly and covered his face with his hands.

D'Arcy looked compassionately at him. "Never mind the shooting, old man!" he returned with attempted levity. "Those other chaps can't bring down *all* the partridges, you know. And I tell you what, I'll come down to the town with you; the walk will do me good!"

Humphrey pressed his hand gratefully, and hastily putting a few things into his travelling bag, in case of having to go to Strath Carron, he set off with his friend.

"We'd better stay here till the answer comes, I think," remarked D'Arcy as they turned away from the telegraph office. "There will be more chance of a speedy answer then."

It was not until the afternoon that the reply came, however. Humphrey tore it open with trembling fingers, scarcely daring to read the scrawl on the pink paper inside. D'Arcy impatiently looked over his shoulder.

"Come, cheer up, Standish!" he cried cheerily; "the old lady's on your side at anyrate!" And thus encouraged, Humphrey read the message, which ran as follows: "Delay marriage. S. no power over A. Am starting directly. Rely on your help."

"Well, now, as you've got your bag here, I think your best plan would be to go off at once to Strath Carron, and, armed with this warrent, to beard the lion in his den." And D'Arcy set his face in the direction of the station as he spoke.

Humphrey followed him. "Yes, that would be best," he returned; "there's no time to lose."

There was no train to Strath Carron till eight o'clock. "And you won't get in till latish, I should say, sir," continued the station-master in reply to his anxious question. "The quick trains are all in the forenoon."

"What time will I get there if I go in the morning?" inquired Humphrey quickly.

"Well, sir, ye'd maybe get there about ten o'clock, if ye took the quarter to seven. That's the best train o' the day; disna stop but twice on the road."

"I think I'll wait for that," said Humphrey, turning to his friend. "I can't do any good arriving in the middle of the night."

"It widna be before twelve o'clock," put in the station-master by way of comment.

"And might do harm," continued the young man, not heeding the interruption, "by putting them on their guard."

D'Arcy acquiesced in the wisdom of this argument. "Shall you stay in the town for the night, then?" he inquired as they left the station.

"Yes, I think so. It would be awkward coming in so early, wouldn't it? But I'll walk a bit of the road back with you."

And they turned away together into the quiet high-road which led to Inverarran.

"It's awfully good of you to have helped me so!" cried Humphrey, when at length they parted. "I should never have known about it if it hadn't been for you!"

"Pooh! my dear fellow, it was nothing," returned the other, giving his hand a hearty shake. "I hope I'm not such a monster as to see a girl sacrificed when I can help her."

"Poor fellow!" he muttered to himself afterwards as he watched Humphrey's tall form fading away in the distance. "He's very hard hit, and no mistake."

The quarter-to-seven train amply justified the station-master's boast, and punctually at ten o'clock Humphrey stepped out on the bare-looking station of Strath Carron. The hotel—there was only one of any repute in the place—was not far from the station, the porter said; and it was without much difficulty that he found himself at last at its door.

The waiter assured him that Miss Sacharty—he had not dared to ask for her father—was up-stairs; and up-stairs he accordingly went, and, motioning aside the obsequious waiter, entered the room before which he had stopped. Avice, who was seated in a low chair by the window, raised her head listlessly as he entered; then seeing who it was who had thus invaded her solitude, she sprang up with a little cry of joy. "Mr. Standish!" she exclaimed advancing quickly towards him—"Mr. Standish!"

Humphrey noted with distress how white and fragile she had grown, and how hot was the little hand which he held so tenderly in his. "Miss Sacharty!" he said sorrowfully, "what have they been doing to you? You look like your own ghost!"

A sad little smile crossed her face. "It is nothing," she returned, with attempted lightness, "nothing at all. I am quite well."

"Quite well!" he echoed reproachfully. "Why should you pretend to *me*, your old companion of so many delightful weeks, that you are quite well, with a face like that! I suppose next you will say you are quite happy!"

The girl's lip quivered at his words, but she determined to put a brave face on the matter. "I ought to be," she returned, her trembling voice belying the words. "Don't you know that I'm engaged?"

"I have heard so," he returned gravely: "but I cannot and will not believe that it is by your own free will. Tell me truly, now it is not so?" He looked at her eagerly, imploringly, but with a quiet steadfast faith in his own assertion that seemed for the time to nerve her enfeebled will.

"No," she replied, in a low tone, so low that he could scarcely catch the words—"no, it is not by my own free will."

"I knew it, I knew it!" he cried joyfully. "But tell me, how could anyone persuade you to take such a step?"

Slowly, bit by bit, with an effort which showed how strong was the influence Mutwanee had upon her, she told him the story of the past few weeks; and ere she ended, Humphrey had decided on his course of action.

"Is your father in?" he inquired abruptly, as she finished speaking. "No? And Mr. Mutwanee?"

"He is out too."

"Good. Then don't let either of them know I'm here. Remember, whatever that fellow asks you about me, you are to tell him nothing. And be assured whatever happens I will save you!" With these words he left her, and went in search of Mrs. Douglas, with whom he had a long and earnest conversation, at the end of which it was agreed that Humphrey should lie perdu in the town until the next day, and that he should allow the marriage to begin before he appeared to stop it. "Otherwise, they may escape us yet," he added oracularly.

There were not many people in the hotel who knew of the tragedy which was being enacted in their midst. Sacharty was very close about his private affairs, and Mutwanee had his own reasons for wishing to keep things quiet. The wedding was fixed for eleven o'clock, an hour when most of the visitors were at the baths; and when the time came there were few in the little church beyond the bride and bridegroom themselves. Of course Oliver Westall was there; he considered it his duty to "see the last of that poor little girl;" and the Digby Brownes had also turned up; but beside them there was no one.

As they walked up the silent aisle, Mrs. Douglas noted how anxiously Avice's eyes glanced from side to side in search of Humphrey; and on pretence of arranging her collar, she managed to whisper: "It will be all right—only trust."

The girl answered by a grateful smile, and the ceremony began.

The clergyman, a nervous little man, had concluded the general exhortation, and was beginning the particular charge to the betrothed couple to declare if they knew of any lawful impediment to their marriage, when steps were heard coming quickly up the half-darkened aisle, and Humphrey's voice rang out clearly in Avice's ears and in those of all present: "This marriage must not proceed."

The words fell like a thunderbolt on all except Avice and Mrs Douglas, who had been in a measure prepared for them. The timid little clergyman dropped his book in terror and gazed at Humphrey, who was followed by two constables, much as a pigmy might look at a giant.

Sacharty was the first to recover himself. "Must it not?" he inquired sneeringly: "And why, pray?" Then, recognizing Humphrey's face, he continued with exaggerated politeness: "Perhaps, Mr. Standish, you will be good enough to explain the reason of this most unwarrantable intrusion."

Without deigning a reply, the young man turned to the clergyman. "I come," he said quietly, "on behalf of Miss Sacharty's legal guardian, to stop this marriage as an iniquitous and illegal affair. This person—indicating Mutwanee, who stood erect and defiant, evidently determined to brazen matters out as best he might—"this person is not a Christian, and has, as can be proved if necessary, several wives already in his own country."

Timid little Mr. Strachan looked horrified, and edged farther away from the foreigner.

Humphrey meanwhile had given his constables instructions to detain the two confederates, and then taking the trembling Avice by the hand, he led her away, leaving Oliver to take charge of Mrs. Douglas.

But Mutwanee had no intention of submitting to his fate without a struggle. Twisting his supple form out of the detaining grasp of the constable, he drew a revolver from his inner pocket and levelled it full at his captor. The constable, quick as thought, sprang aside, and the contents of the chamber were lodged in the heart of the wretched Sacharty, who fell back without a groan. The other constable, thus released from guard, advanced swiftly towards the Malay, who was preparing for a second shot, and suddenly wrenching his weapon from his grasp, slipped a pair of handcuffs on him, and, assisted by his comrade, marched him off to the town prison, there to await his trial for murder and attempted bigamy.

It was with difficulty that Humphrey succeeded in conveying Avice back to the hotel, for the poor girl's nerves were so shaken by what she had gone through that she could hardly stand; and when at last they did gain the hotel hall, she looked so dreadfully ill that he was fain to relinquish her into the hands of Mrs. Douglas, who insisted on sending her at once to bed.

As he stood watching her feebly mounting the stairs, Andrew touched his arm. "Beg pardon, sir," he said; "But there's a telegram come for you a while since; and he handed him a salver with an ominous-looking envelope on it. Humphery opened it hastily. It was from Jack D'Arcy. "Aunt telegraphed, coming Strath Carron this morning about twelve." It was then a quarter to.

"Thank goodness!" he exclaimed, replacing the paper in its envelope—"thank goodness!" Then turning to Andrew he said hurriedly: "Just tell Mrs. Douglas that I am going to the station. I shall not be long."

The waiter turned to execute his order, and he set off.

The train was late, as trains generally are when one wants them to be punctual, and it was fully a quarter past twelve ere it steamed into the station. There were very few passengers for Strath Carron, and Humphrey easily distinguished Miss Marchmont's spare form among them. She looked anxious and troubled; but a smile of genuine pleasure crossed her face as Humphrey greeted her. It changed to a look of alarm when he told her how dreadfully upset Avice was; and as soon as they reached the hotel she rushed up-stairs to see her darling niece. Avice was tossing about in a restless sleep, talking fast and almost incoherently as she turned from side to side. Mrs Douglass sat watching her with a troubled face, which, however, brightened as Miss Marchmont entered. She felt that she could now shift part at least of the responsibility of the nursing on to her.

And a heavy responsibility it was; for the doctor, whom Miss Marchmont had at once summond in her alarm, declared that the girl was suffering from an acute attack of brain fever, induced by the excitement of the past few weeks, and he could not say what the end might be. "She may recover," he said doubtfully as he went down stairs with Miss Marchmont the next day. "Yes, with care she may recover; but I tell you frankly that I fear the worst."

As a rule, Dr. Forsyth was a hopeful individual, who preferred looking on the bright side of things, and thus his ominous words struck a chill into the hearts of Miss Marchmont and Humphrey. The latter was hanging about the hall as he usually was, waiting for the slightest news of Avice; and he walked to the end of the road with the doctor when he departed, trying to win some crumb of comfort and hope from him.

When he returned, he found that a messenger had arrived from the police court with a polite request from the superintendent that he would come and speak to him on a matter of great importance. Sick at heart he set off, and when he got there he learnt to his horror that Tehander Mutwanee had been found dead in his cell that very morning. A post-mortem examination had been determined upon, as they could find no visible cause of his death. "And I thought," continued the official blandly, "that you might know something of the deceased's habits, something that would give us a clue to work upon."

But Humphrey knew nothing, and so was suffered to depart. A few days later he heard that the doctor's report had been "Suicide by poison." But he did not pay much heed to the matter, for both he and Miss Marchmont were too much occupied with axiety about Avice, who was hanging between life and death.

As the doctor had predicted she had a hard fight for life; but at last, though as weak as a child, she was pronounced out of danger, and entered upon her long convalescence.

It was months before she regained anything like her old health and for long the least allusion to the events of September upset her so terribly that the subject was never mentioned. At last one day, of her own accord, she asked where her father was; and then Miss Marchmont gently told her all, and how she need never fear Tehandar Mutwanee again. There was a short pause, and then she went on hesitatingly: "What was that letter you talked about so often in your illness, Avice, one from me sanctioning your marriage?"

Avice looked puzzled for a moment, then she said: "Oh yes! I remember." And for the first time her aunt heard the story of the letter. "I felt as if my last hope had gone then!" the girl added as Miss Marchmont stroked her wasted hand thoughtfully.

That lady did not speak for a few moments. "I did not write it," she said at length quietly. "Kilmur must have forged it himself."

And then, since he was dead, and they were loth to speak ill of him, the subject was dropped for ever. Humphrey coming in a little later, found Avice alone, for Miss Marchmont had suddenly recollected an errand she had in the town; and there, in the quiet light of the spring evening, he told her how he loved her; and hand in hand, the glory of the setting sun lighting their faces with its dying rays, they plighted the troth which was to last "till death us do part."

[THE END]

STONE-HOOKING ON LAKE ONTARIO.

Hardy Fishermen Who Carry On a Unique Industry.

When the scriptual writer referred to the heartlessness of giving a stone to a seeker after bread he had evidently never heard of the "stone-hookers" of Lake Ontario. These men seek stones for their daily bread, and seek them in the bottom of the lake, from the depths of which they fish up the boulders with long hooks. In all probability it is the only place in the world where such a calling is pursued, as it is only made practicable or profitable by the natural conditions of the country. Though it has attained quite a position in commercial sense by reason of its extent, there are probably few outside the business who know much about it.

Many tourists in that region will doubtless observe long lines of rough-looking schooners anchored off shore, especially on fine, calm mornings. They lie there with their patched and blackened sails brailed up, swinging in apparent idleness at their anchors, while at some distance from them two or three soiltary-looking men in a scow angle with long poles which they thrust down in the water. These are the hookers at work. Their business consists in fishing up large and small stones from the bottom of the lake near the shore to be used for building purposes. Their principal ground of operation lies on the north shore of Lake Ontario between Bronte and Whitby. The vessels engaged in the business are mostly scow-built (that is, flat at both ends) and schooner-rigged, with a capacity ranging from two to ten toise of stone, a toise being about a cord. Some are rather handsome, well-equipped boats, and one that used to sail from Port Credit was said to have been a crack Toronto yacht at some former stage of its existence. On account of their heaviness when loaded with stone they carry long raking masts and an immense spread of canvas, which is all right as long as they are loaded, but makes them mighty cranky when running light in a gale. Their outfit consists of a large scow, longhandled iron rakes, sledge-hammers and shovels.

They make their headquarters at ports on the lake shore, and fine mornings about 3.30 they may be seen stealing slowly out of port. Wrapped in the ghost-like shore mist they drift noiselessly down a mile or two and then the silence is broken by a hoarse command. There is a trampling of feet on the deck the anchor drops with a splash and the chains rush after it. The captain and one man, dressed in warm clothing, with high rubber thigh-boots and waterproof aprons, jump into the scow and pull off towards the shore.

There are three methods of securing the stone—quarrying, raking and "blind stabbing." Quarrying, as its name implies, is simply going on shore and breaking away pieces from the low cliffs with sledge-hammers or picking stone off the beaches.

When raking, the boats move along within a short distance of the shore, where the men can see the bottom and pick up the stones they find with the long-handled rakes or hooks.

When stone is scarcer they move out into deeper water and drag their hooks along the bottom, pulling in all they catch. This is called "blind stabbing.

Under favorable circumstances a hookerman can make from $40 to $60 per day; but as may be supposed, such occasions are few and far between. As a matter of fact, man and the elements conspire to make the hooker's life anything but a happy one. If the wind freshens up, as it usually does on that Lake about 10 A. M., it discolors the water so much in shore that raking is impossible, while the accompanying rough water makes blindstabbing a hazardous employment. On the other hand, the farmers along the lake shore have a decided objection to the hookermen removing the stone from the shore, as the banks are thus weakened and liable to be undermined. The consequence is that some years ago farmers got a bill put through the Legislature that no hookerman should approach nearer than fifty feet from the shore under a penalty of not more than $50.

This stone is mostly fine limestone and is obtained in large squares. Every heavy gale from the east throws up large quantities of stone, but during the Summer months the hookers pick the bottom of the lake near the shore almost bare. They dispose of the stone in Toronto, where it is used for building foundations, and the price paid is from $8 to $9 per toise.

Economic Weight of a Hog

Experiments made for the purpose of determining the economic weight of a hog show conclusively that he never should be fed beyond eight or nine months of age, and that the largest profit is found, as a rule, in a weight not to exceed 200 pounds. What is known as the food of support plays a very important part in the profit or loss of large weights. Suppose, as many farmers say, that a resolution is made to turn the hog when he reaches 300 pounds. He must take from his food an increasing amount each day to support the weight already gained, or else he drops back. The German experiments indicate that two per cent, of the live weight, in food, must be taken each day to support that live weight. If the hog weights 300 pounds this amounts to six pounds of food daily. The only profit is in the food that is applied to make new weight.

A recent pig-feeding experiment at the Maine Station illustrates this principle excellently. The pigs were taken at ages ranging from five weeks to eight weeks. During the first 100 days of the experiment not far from two pounds of indigestible food produced one pound of growth, while during the last fifty days the ratio was four pounds of digestible food to one of growth. Every pound of pork made during the last fifty days cost double to that made in the first 100 days.

The lesson taught by this principle is practically stated that the most money can be made from young hogs turned at medium weight.

A prehistoric cemetery recently unearthed in Mexico contained the skeletons of men with distinctly developed tails.

POWER OF THE 16-INCH GUN.

Wonderful Result At a Special Test in England.

In March last the British Admiralty determined to test the full power of a sixteen-inch 110-ton rifle, made for the great war ship Sanspareil. The gun was set up at Shoeburyness. In front of it was built such a target as the world never saw before. First, to receive the impact of the ball, was a solid steel armor plate of the best make, twenty inches thick. This was backed by an eight-inch iron plate. This in turn was backed by twenty feet of oak timbers, the whole being secured together to form the most solid mass possible. Back of the timbers was a granite wall five feet thick and laid in cement. Then to brace the wall they built up a solid mass of concrete eleven feet thick, and a six-foot wall of brick.

To fully appreciate what a substantial mass this target presented, one must consider that the twenty-inch armor plate is the thickest ever used on a ship. The armor on the Empress of India, the very latest of British battle ships, is but eighteen inches thick, while her barbettes are seventeen inches. The eight inches of iron behind the armor plate of the target was a most efficient backing because of its toughness. As to the oak, it should be remembered that "the wooden walls" of which the sailors used to sing, though never more than two feet thick, were able often to stop the projectiles of the enemy at short range. In this target was a twenty-foot wooden wall.

Children sometimes ask, in speaking of the big guns. "Could they shoot through a house?" In this target is a wall of granite five feet thick, and it is a mighty tall building that requires a five foot wall at the street floor. But what need to say more? No better wall could be made for testing the power of a monster than this.

A description of the gun that was fired at this target is worth giving. The diameter of the bore was sixteen inches. It consisted of a steel tube forty-seven feet long, around the breech of which had been shrunk numerous steel jackets to give it strength to resist the terrific strain of the exploding powder. The whole weight was 110 tons. It was mounted on a carriage which could be moved only as the gun itself was moved on its trunnions, by hydraulic and steam power. Having it in place before the target, the gun's crew unscrewed the breech hauled it out, and shoved it to one side, all by means of hydraulic engines. Then they hoisted up the projectile with another machine. This projectile was of solid steel, sharp pointed, and nearly four feet long. It weighed 1,800 pounds. It had a copper collar which was to catch in the rifles of the bore and send the projectile whirling. This projectile was rammed into its place in the cannon with a machine. Then came the powder. This powder is made in little hexagonal cakes of a cocoa color with a hole through the centre of each. Ten thousand of these little cakes are required for a charge for the big gun, and the weight of the charge is 960 pounds—more than half the weight of the projectile. In the most powerful express rifle used by sportsmen the proportion of powder to bullet is as 120 to 300 grains. The cannon is away ahead.

The powder charge is made up into eight cartridges of 120 pounds each. The cartridge bags are of silk, and a layer of black powder, which burns faster than cocoa, is put in the after end of each bag. The charge of powder is rammed home by machinery.

Having the gun loaded, the breech was closed, an electrical connection was made with the charge, the gun was pointed at the target, and then one of the officers touched the button. The enormous projectile was hurled from the muzzle at 2,079 feet per second through the armour plate, the eight-inch iron plate, the twenty feet of wood, the five feet of granite, and the eleven feet of concrete, to bury itself at last in the brick wall and remain there.

Another way of comprehending the power of one of these great rifles is to consider the range. Roughly speaking, a rifle will throw a projectile a mile for every inch diameter of bore. The six-inch rifle has a range of six miles, the eight-inch of eight miles, &c. In actual practice the range of the sixteen-inch rifle is thirteen miles.

In spite of its tremendous power, however, no sixteen-inch gun will again be mounted on a war ship. The new battle ship, Empress of India, is to have thirteen-inch guns instead. These will be of ample power, for at 1,000 yards the projectile will pierce twenty-seven inches of wrought iron armor. In spite of its power, the objections to the big gun outweigh its advantages. The thirteen-inch gun weighs but sixty-seven tons—forty-three tons less. The discharge of the great fellow over the deep of the ship plays havoc with the deck, the blast of the gases has broken deck beams and opened the seams. The big gun costs just $100,000 to build, and the greatest number of times which it can be safely fired is calculated at seventy-five. No one knows whether it would last even as long as that; very likely it would not, for the impact of the gases released from the 10,000 kernels of cocoa powder erodes great furrows in the tempered steel lining of the gun at every discharge. The next smaller but sufficiently powerful gun is supposed to last for 120 rounds, while to build it costs $70,000—$30,000 less. Moreover it takes two years to build the larger and but eighteen months to build the smaller.

The building of 110-ton guns was begun about twelve years ago by Sir William Armstrong & Co. In all, 109 of them have been built. The Krupp works turned out one 17-inch gun of 127 tons weight—the most powerful ever built. Of the big fellows, the great majority went to Italy. The first ones were muzzle loaders. The Victoria, the Sanspareil, and the Bebow have two, each mounted, and one each in reserve. There are two each at Malta and Gibraltar. There is very little, if any, criticism of their use in forts, for their weight and room occupied count for nothing.

The one insuperable defect in the great gun as now mounted is the penetrability. Every ship that has them must go into action with from twenty to thirty feet of each muzzle projecting into the open air in plain view of the enemy's gunners, an ample target for the rapid-fire cannon. The modern rapid-fire gun hurls a sharp steel bolt from four to six inches in diameter and weighing from 32 to 100 pounds, according to the bore of the gun, at the rate of ten per minute.

A Battle Creek, Mich., man has patented a typewriter for musical composers. The copy which it makes can be photographed and a plate reproduced for printing which is said to be much better than plates made in the ordinary way.