

## CHAPTER X.

### ONE ENEMY AGAINST TWENTY-FIVE MILLIONS OF FRIENDS.

The American public took great interest in the least details of the Gun Club's enterprise. It followed the committee debates day by day. The most simple preparations for this great experiment, the questions of figures it provoked, the mechanical difficulties to be solved, all excited popular opinion to the highest pitch.

More than a year would elapse between the commencement of the work and its completion; but the interval would not be void of excitement. The place to be chosen for the boring, the casting the metal of the Columbiad, its perilous loading, all this was more than necessary to excite public curiosity. The projectile, once fired, would be out of sight in a few seconds; then what would become of it, how it would behave in space, how it would reach the moon, none but a few privileged persons would see with their own eyes. Thus, then, the preparations for the experiment and the precise details of its execution constituted the real source of interest.

In the meantime the purely scientific attraction of the enterprise was all at once heightened by an incident.

It is known what numerous legions of admirers and friends the Barbicane

project had called round its author. But, notwithstanding the number and importance of the majority, it was not destined to be unanimous. One man, one out of all the United States, protested against the Gun Club. He attacked it violently on every occasion, and--for human nature is thus constituted--Barbicané was more sensitive to this one man's opposition than to the applause of all the others.

Nevertheless he well knew the motive of this antipathy, from whence came this solitary enmity, why it was personal and of ancient date; lastly, in what rivalry it had taken root.

The president of the Gun Club had never seen this persevering enemy. Happily, for the meeting of the two men would certainly have had disastrous consequences. This rival was a savant like Barbicané, a proud, enterprising, determined, and violent character, a pure Yankee. His name was Captain Nicholl. He lived in Philadelphia.

No one is ignorant of the curious struggle which went on during the Federal war between the projectile and ironclad vessels, the former destined to pierce the latter, the latter determined not to be pierced. Thence came a radical transformation in the navies of the two continents. Cannon-balls and iron plates struggled for supremacy, the former getting larger as the latter got thicker. Ships armed with formidable guns went into the fire under shelter of their invulnerable armour. The Merrimac, Monitor, ram Tennessee, and Wechhausen shot enormous projectiles after having made themselves proof against the

projectiles of other ships. They did to others what they would not have others do to them, an immoral principle upon which the whole art of war is based.

Now Barbicane was a great caster of projectiles, and Nicholl was an equally great forger of plate-armour. The one cast night and day at Baltimore, the other forged day and night at Philadelphia. Each followed an essentially different current of ideas.

As soon as Barbicane had invented a new projectile, Nicholl invented a new plate armour. The president of the Gun Club passed his life in piercing holes, the captain in preventing him doing it. Hence a constant rivalry which even touched their persons. Nicholl appeared in Barbicane's dreams as an impenetrable ironclad against which he split, and Barbicane in Nicholl's dreams appeared like a projectile which ripped him up.

Still, although they ran along two diverging lines, these savants would have ended by meeting each other in spite of all the axioms in geometry; but then it would have been on a duel field. Happily for these worthy citizens, so useful to their country, a distance of from fifty to sixty miles separated them, and their friends put such obstacles in the way that they never met.

At present it was not clearly known which of the two inventors held the palm. The results obtained rendered a just decision difficult. It

seemed, however, that in the end armour-plate would have to give way to projectiles. Nevertheless, competent men had their doubts. At the latest experiments the cylindro-conical shots of Barbicane had no more effect than pins upon Nicholl's armour-plate. That day the forger of Philadelphia believed himself victorious, and henceforth had nothing but disdain for his rival. But when, later on, Barbicane substituted simple howitzers of 600 lbs. for conical shots, the captain was obliged to go down in his own estimation. In fact, these projectiles, though of mediocre velocity, drilled with holes and broke to pieces armour-plate of the best metal.

Things had reached this point and victory seemed to rest with the projectile, when the war ended the very day that Nicholl terminated a new forged armour-plate. It was a masterpiece of its kind. It defied all the projectiles in the world. The captain had it taken to the Washington Polygon and challenged the president of the Gun Club to pierce it. Barbicane, peace having been made, would not attempt the experiment.

Then Nicholl, in a rage, offered to expose his armour-plate to the shock of any kind of projectile, solid, hollow, round, or conical.

The president, who was determined not to compromise his last success, refused.

Nicholl, excited by this unqualified obstinacy, tried to tempt Barbicane by leaving him every advantage. He proposed to put his plate 200 yards

from the gun. Barbicane still refused. At 100 yards? Not even at 75.

"At 50, then," cried the captain, through the newspapers, "at 25 yards from my plate, and I will be behind it."

Barbicane answered that even if Captain Nicholl would be in front of it he would not fire any more.

On this reply, Nicholl could no longer contain himself. He had recourse to personalities; he insinuated cowardice--that the man who refuses to fire a shot from a cannon is very nearly being afraid of it; that, in short, the artillerymen who fight now at six miles distance have prudently substituted mathematical formulae for individual courage, and that there is as much bravery required to quietly wait for a cannon-ball behind armour-plate as to send it according to all the rules of science.

To these insinuations Barbicane answered nothing. Perhaps he never knew about them, for the calculations of his great enterprise absorbed him entirely.

When he made his famous communication to the Gun Club, the anger of Captain Nicholl reached its maximum. Mixed with it was supreme jealousy and a sentiment of absolute powerlessness. How could he invent anything better than a Columbiad 900 feet long? What armour-plate could ever resist a projectile of 30,000 lbs.? Nicholl was at first crushed by this cannon-ball, then he recovered and resolved to crush the proposition by

the weight of his best arguments.

He therefore violently attacked the labours of the Gun Club. He sent a number of letters to the newspapers, which they did not refuse to publish. He tried to demolish Barbicane's work scientifically. Once the war begun, he called reasons of every kind to his aid, reasons it must be acknowledged often specious and of bad metal.

Firstly, Barbicane was violently attacked about his figures. Nicholl tried to prove by  $A + B$  the falseness of his formulae, and he accused him of being ignorant of the rudimentary principles of ballistics. Amongst other errors, and according to Nicholl's own calculations, it was impossible to give any body a velocity of 12,000 yards a second. He sustained, algebra in hand, that even with that velocity a projectile thus heavy would never pass the limits of the terrestrial atmosphere. It would not even go eight leagues! Better still. Granted the velocity, and taking it as sufficient, the shot would not resist the pressure of the gas developed by the combustion of 1,600,000 pounds of powder, and even if it did resist that pressure, it at least would not support such a temperature; it would melt as it issued from the Columbiad, and would fall in red-hot rain on the heads of the imprudent spectators.

Barbicane paid no attention to these attacks, and went on with his work.

Then Nicholl considered the question in its other aspects. Without speaking of its uselessness from all other points of view, he looked

upon the experiment as exceedingly dangerous, both for the citizens who authorised so condemnable a spectacle by their presence, and for the towns near the deplorable cannon. He also remarked that if the projectile did not reach its destination, a result absolutely impossible, it was evident that it would fall on to the earth again, and that the fall of such a mass multiplied by the square of its velocity would singularly damage some point on the globe. Therefore, in such a circumstance, and without any restriction being put upon the rights of free citizens, it was one of those cases in which the intervention of government became necessary, and the safety of all must not be endangered for the good pleasure of a single individual.

It will be seen to what exaggeration Captain Nicholl allowed himself to be carried. He was alone in his opinion. Nobody took any notice of his Cassandra prophecies. They let him exclaim as much as he liked, till his throat was sore if he pleased. He had constituted himself the defender of a cause lost in advance. He was heard but not listened to, and he did not carry off a single admirer from the president of the Gun Club, who did not even take the trouble to refute his rival's arguments.

Nicholl, driven into his last intrenchments, and not being able to fight for his opinion, resolved to pay for it. He therefore proposed in the Richmond Inquirer a series of bets conceived in these terms and in an increasing proportion.

He bet that--

1. The funds necessary for the Gun Club's enterprise would not be forthcoming, 1,000 dols.
  
2. That the casting of a cannon of 900 feet was impracticable and would not succeed, 2,000 dols.
  
3. That it would be impossible to load the Columbiad, and that the pyroxyle would ignite spontaneously under the weight of the projectile, 3,000 dols.
  
4. That the Columbiad would burst at the first discharge, 4,000 dols.
  
5. That the projectile would not even go six miles, and would fall a few seconds after its discharge, 5,000 dols.

It will be seen that the captain was risking an important sum in his invincible obstinacy. No less than 15,000 dols. were at stake.

Notwithstanding the importance of the wager, he received on the 19th of October a sealed packet of superb laconism, couched in these terms:--

"Baltimore, October 18th.

"Done.



"BARBICANE."