Carpenter's Letter

(Continued from Page Twelve.)

of scientific investigation. We know so little of the air and its movements that there is much to discover. I have been charged with attempting to invent a flying machine. There may have been some reason for such a supposition, but the fact has no foundation whatsoever. I am experimenting to discover the properties of aerial flight and the constituent elements necessary to its success. When I have ascertained these facts I may be ready to attempt to invent a flying machine, but not until then."

"What have you discovered?" I asked.

"I think I have found that there is a peculiar form in which all things which are to be maintained in the air should be made. I have ascertained the shape of the cell which in combination with similarly shaped cells must compose the flying body; the brick, as it were, out of which the flying house must be made, the unit of which it seems to me all such machines must be constructed."

"What is the unit, Dr. Bell?" I asked.

"I call it the tetrahedron unit, because it has the form of a tetrahedron. If you will place three matches end to end in the shape of a triangle and then take three more, resting one end of each at a corner, so that the other ends will meet over the center of the triangle, you will have the skeleton of a tetrahedron. Now tie the ends of the matches together, and you will find that the framework, as a whole, is wonderfully strong in comparison with its weight. In aerial navigation we find that the questions of strength and weight are all-important ones, and that new elements must be taken into consideration which prior to this time have not been appreciated. To support a heavy body in the air a greater surface in proportion to the weight must be had than is generally supposed. In increasing the size we find that the weight increases as the cube of the dimensions, whereas the surface increases only as a square of the dimensions. Simon Newcomb recently brought this out in an article in attempting to show the futility of trying to make successful flying machines. In other words, as you increase the size of your machine you do not increase its ability to sustain itself in the air. The model may work perfectly, but the great machine made on that model will for this reason not do at all. This has been proven again and again by actual experiment. It was so with the weather bureau kites made of a box shape. Those of ordinary size flew very well, but the great kites constructed in exactly the same way, with the hope that they would carry meteorological recording instruments high into the air, would not rise at all.

"This fact led me to experiment to find a shape which when increased or multiplied in size might have the sustaining surface and the weight equally multiplied. I have discovered this in the tetrahedron, which I believe to be the only unit of construction in the flying machine of the future."

"How could you test this?" I asked.

"Only by actual experiments," was the reply. "I have made kites of this shape in various sizes and combinations and have scientifically measured their flying capacity and strength. I have discovered that kites, large and small, may be made of these units, and that they are stronger in proportion to their weight and size than any kites ever made.

"But I can show you models and photographs of my work in this line," said Dr. Bell. He thereupon left the room and a little later returned bringing several large scrap books filled with photographs and also some kites and kite frames of a peculiar shape.

"This is the way I note down my work," said he, as he opened a scrap book. "I find it almost impossible to keep a record of inventive progress with pen or pencil. Just at the time one makes a discovery he is so interested in going on with it that he fails to put down the fact and the time. The result there is danger of losing the record and the possibility of establishing his priority of the discovery. Now I have one man who does nothing else but make snap shots of everything I do in the way of experiments. This is one of the books showing our investigations in this particular line."

Dr. Bell here handed me the volume. It was filled with photographs of kites of various shapes; in flight, at rest and in construction. Some were made of small tetrahedral units combined together into a flying kite as big as a good-sized cottage, others had other shapes. There were large single kites with a framework of aluminum tubes and small kites of silk with wooden frames; little kites flying from the hands of Mrs. Bell and other ladies of the family; and kites so big that a steamer on the bay or a man upon horseback had to rush along with them to raise them into the air.

"The strength of the unit was shown in many of the photographs, and also the great power of the flying tetrahedrals. Some, Dr. Bell told me, were strong enough to carry a man into the air and some had seats in them where one might sit if he wished to risk a flight. Others when they flew up from the water carried the tetrahedral boats on which they rested up with them, and Dr. Bell said that some had almost torn the masts from the steam tug used to raise them. There were photographs of men hanging to the framework to test its strength, and, in short, a wonderful collection of snapshots, showing every phase of these hundreds of experiments in their results.

"You can easily test the sustaining power of each kite," said Dr. Bell, as he looked at one of the pages of the book. "We know, for instance, that if it takes a horse running at the rate of ten mies an hour to raise a kite so that it may be kept in the air an engine of one horse-power will do the same, provided the weight is not greater than the power exerted by the kite as it flies. We have had such kites raise into the air bodies weighing 600 pounds and more. Such a kite could therefore sustain an engine and machinery which might direct its flight, provided their weight altogether was not more than 600 pounds. I say this, not to indicate that I have invented a flying machine, but merely to give you an idea along what lines I am working. I am merely seeking to discover the foundation principles upon which such an invention must be based. When I have reached that end I may try to go farther, but not until then."

FRANK G. CARPENTER.

Secret Service Gang

(Continued from Page Two.)

sudden call to arms at night. I saw it ten minutes after I had called the major. The two companies were lined up on the plaza. No doubt, the guerrillas in ambush had intended to wait until moonset before attacking, but they must have heard the men tumbling out. A volley came crashing out of the jungle beyond the hospital building. Two of our men fell. Then the two companies concentrated their fires on the one spot. A few feeble spurts of flame answered—then silence. That was all there was to the fight.

At dawn ten dead insurgents were brought in and tumbled into a ditch. But five of us from the hospital recovered one of them, and carried it up into the jungle and there buried it alone. He had been a spy on our troops, but we thought enough of Pedro to do that.

As for Pedro's confederates, the Corporal and his gang, we never saw one of them again. But there came rumors from the natives that the Corporal had been seen in a colony of his kind up the mountain, where he would never trouble the major's dispatch file again.

ALBERT SONNISCHEN.

Pointed Paragraphs

Misery is about the only real enjoyment a pessimist has.

It's the lucky man who tells you there is no such thing as luck.

Most men would rather work for a small salary than big wages.

Some men spend their money as foolishly as others spend their time.

Every time a widower looks at an unmarried woman the gossips get busy.

A dollar saved is a dollar earned, and a dollar not loaned is a dollar saved.

Some men belong to church and some others seem to think the church belongs to them.

An honorable woman is one who doesn't try to get another woman's cook away from her.

For every man who achieves greatness there are millions who fail to have it thrust upon them.

A man isn't necessarily unhappy just because a woman marries him to reform him. She may fail.

When a man gets so old that he doesn't turn his head to look after a pretty woman he has outlived his usefulness.

When you begin to notice a man's name in the financial columns of a newspaper it is time to look for his wife's name in the society columns.—Chicago News.

Golf and Gutta Percha

Until about ten years ago the submarine cable companies used practically the whole world's supply of gutta percha, for the reason that, unlike rubber, it is not affected by salt water. But when the game of golf became the fad in Europe, Engand and the United States, it was found that gutta percha is the only satisfactory material out of which to make the balls, and the demand for it increased to so great an extent that the production nearly doubled.

The ships from Singapore, Straits Settlements, now bring enormous cargoes of it, and although twice as much is imported by England as was imported ten years ago, the price has advanced about 100 per cent. This, the cable companies say, is due solely to the manufacture of golf balls.—Philadelphia Record.