SANTOS-DUMONT, GREATEST AERONAUT OF THE WORLD.

IF there be doubt anywhere that Santos-Dumont is the greatest aeronaut the world ever saw, it is at all events not in the minds of those who witnessed his latest ascent. We who were so fortunate as to be present are filled with wonder. Of course his feats have been cabled to America, and you of the western hemisphere are wondering with us here in Europe what he will do next. He has, however, given us an inkling of his plans, for his aerial voyages in the bay of Monaco were merely preliminary, he said, to a longer flight to Corsica and the north coast of Africa. As the inhabitants of your vast continent measure distances, the trip to Calvi, in Corsica, and thence to Algiers is merely a step across the Mediterranean; but, after all there will be a great triumph awaiting the man who makes it.

In this connection it has been suggested that by first taking in Africa before pluming himself for his longer flight across the ocean to America—for, you know, he intends to visit you before summer—Santos-Dumont is doing what his great predecessor, Christopher Columbus, did more than 400 years ago. Columbus, a native of neighboring Genoa, by the way, went over to Africa as a soldier before he made the memorable voyage that resulted in the discovery of America. He marked out the way in 1492 for others to follow, and Santos is doing the same, so far as aerial navigation is concerned.

When Santos came here a short time ago, bringing with him his new balloons, the Santos-Dumont VI. and Santos-Dumont VII., and erected his big aerodrome on the Riviera, the gay visitors to these winter resorts, Monte Carlo, Monaco, etc., looked forward merely to a new sensation or so; nothing more. But Santos is not the sort to allow himself to be beguiled either by the blandishments of the fair habitues of Monte Carlo or the temptations of the gaming table. Although in a sense the guest of that king of gamblers, the Prince of Monaco, he sternly set his face against anything looking toward pastime or gaming and went to work the very moment he arrived, and he has been at work ever since, all his doings showing that he has a more serious view of life and its possibilities for him than many a man twice his age. As for money, he certainly "has no use" for it, being well supplied with lucre by his father, a wealthy planter in Brazil, and also by the prince, who is interested in scientific matters.

Well, Santos came here with his "racing stable," containing the latest pair of aerostats, "Sixes and Sevens," as they term them here, or, in other words, the VI., which took the Deutsch prize by sailing around the Eiffel tower not long ago, and the VII., which is the up to datest steerable balloon ever turned out of the shops. The last named is a racing balloon if ever there was one and is ten meters longer than was the VI., being 40 meters in length by 6 in breadth at its widest part, with a gas capacity of 830 cubic meters. Besides being greater in every respect than any other Santos has had constructed, VII. has two propellers, one at the bow and the other at the stern, each one five meters in diameter and worked by a motor of forty-five horsepower. The VII. is a more magnificent machine than the VI., but evidently the latter was the young Brazilian's pet, not only because he won the prize in it, but because it was rather more manageable than the former. But with either of the aerostates, as he has amply demonstrated by his half dozen preliminary trials, he could sail the upper atmosphere at will—that is, he could sail it when it was comparatively calm. I doubt his ability to navigate against a strong wind, even though he did manage the other day to force the balloon into the teeth of quite a blow.

But you should have been here to witness the excitement during his experimental trips. Almost the entire population of Monaco's little principality, amounting all told to about the number necessary to constitute a second class city in the United States, turned out. From the heights of Monaco we watched the daring aeronaut's skillful evolutions in the air, darting hither and thither over the open sea. When he finally descended, after having had a splendid time, as he says, he was given such ovations as are not accorded even to that mythical man who "breaks the bank at Monte Carlo."

I nearly forgot to mention the little incident of that mishap to Santos, also over the water. He now alludes to the unfortunate No. VI. as his "collapsible balloon" and really made so merry over the accident that one would think it had been prearranged as a part of the programme. That he was rescued goes without saying, for the irrepressible Santos says he always is rescued, no matter what kind of an accident happens. This is his fourth serious mishap, the first one having occurred in 1898, also owing to the collapse of his balloon; likewise the second and most noteworthy, last summer, when Santos was hung up on the roof of a very high hotel and was rescued with difficulty. The third accident happened when he was caught in a tree in Rothschild's garden, where he was suspended between heaven and earth for awhile, and now comes this last experience. But Santos treats them as mere episodes and is the least scared of any of us, saying laughingly that he was born to be neither hanged nor drowned, but to astonish with his feats the world, and particularly America, which country he is longing very much to see.

There has been a great deal of speculation as to the probabilities of our young friend getting killed at no very distant date owing to his apparent recklessness. Whatever he may think, and he certainly has the courage of his convictions, it is by no means sure that his craft can stand the strain of a long journey through the air. There is a difference, you know, between his aerostat, which is merely a balloon, though to some extent a dirigible one, and what aeronauts generally regard as the aerial ship of the future—the perfect flying machine.

Now, I have seen Santos in several of his flights, not only here at Monaco, but in Paris, and, though I have learned to love him for his achievements and his daring, not to say recklessness, I cannot yield my reason to my preferences. I would like to see Santos fly direct to victory on the wings of the wind; but there is the great obstacle to his perfect success—the wind. While he can forge ahead in the face of an ordinary breeze, he cannot breast the wind at a velocity of more than twenty or thirty miles an hour, which is, comparatively speaking, merely a zephyr. Aided by the gas bag hanging over him, he can drift along at about a crow's flight, of not more than thirty miles an hour; but to attain the speed of the wild goose, the swallow or the passenger pigeon, of from ninety to one hundred miles per hour, will be forever impossible with his sort of flier. It is that ponderous and unwieldy gas bag, which is alike a factor making for safety and a drag upon his chariot wheels.

As has been demonstrated by Maxim, Langley and the experts of the French and German governments, a flying machine of any weight or size self driven by its own motor and without the attendant gas bag is a possibility. Langley and Maxim declare it is a possibility of the very near future. And, moreover, it is the only case upon which reliance may be placed for speed and accuracy of flight. As to safety—ah, that is quite another thing. Had it not been for his balloon attachment Dumont would have been dashed to pieces long ago, provided he had experimented extensively as an "aviator" or true flier, like poor Lilienthal, who lost his life a few years ago by a fall from his "soaring machine."

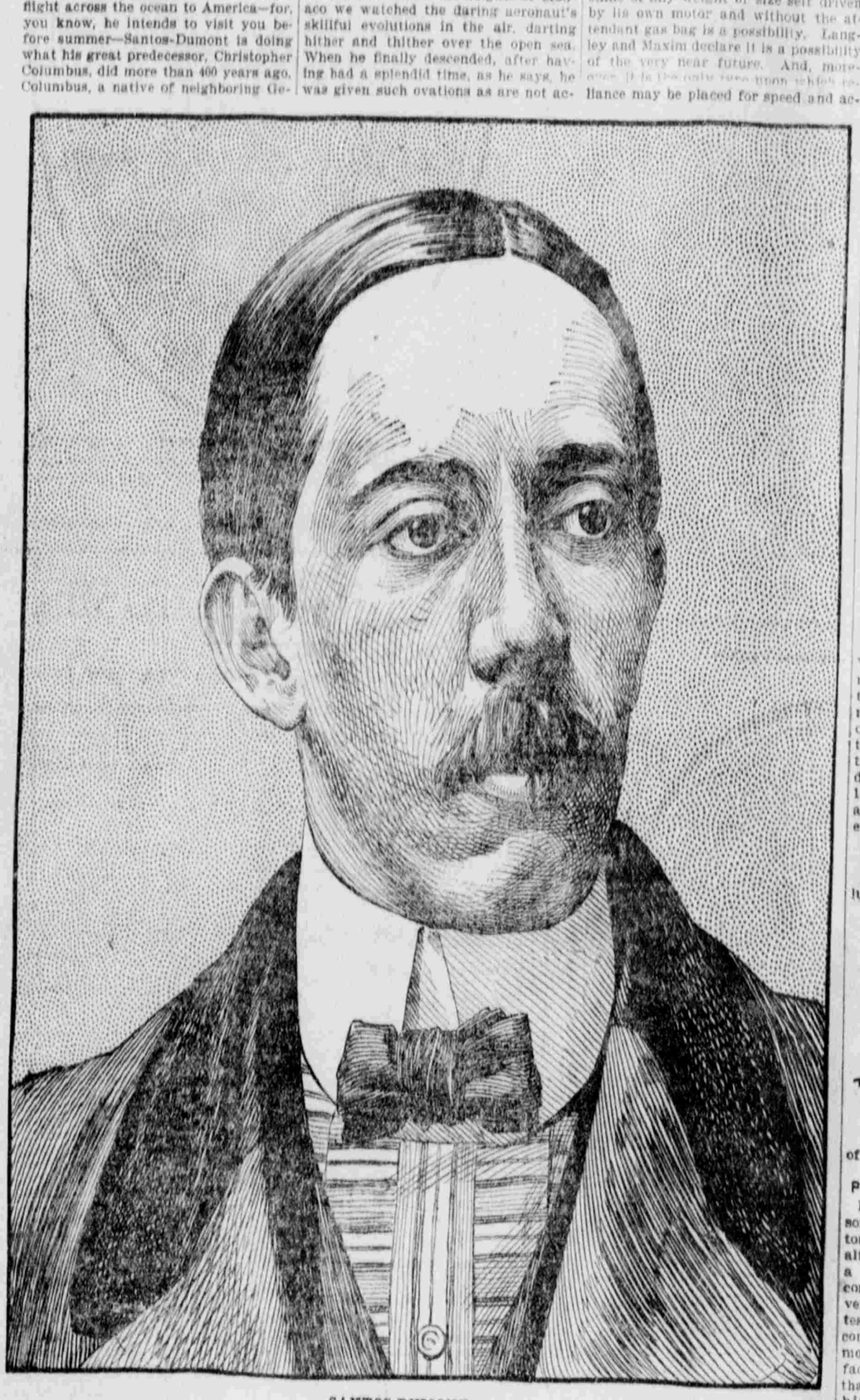
The problem to solve, the aerodynamic experts say, is to supply a motor sufficiently powerful and yet light of weight to propel an aeroplane of requisite size. To attain high speed, they say, there must be low resistance and small loads—great power concentrated within the smallest possible compass and the least possible weight per horsepower. Professor Langley, the eminent head of your Smithsonian institution, has the experts of Europe with him apparently when he says, "So far as power simply is concerned mechanical flight is possible with such engines as we already possess."

Airships may be built, and doubtless will be, as large as our present ocean steamships; but, though of vast bulk, they will not have great carrying capacity. They may make the voyage across the Atlantic in twenty-four hours, for the difficulty will be not to secure rapid propulsion, but a medium in which to alight. "It is to arrest the speed of the airship and stop her without smashing everything into bits by the shock," says an eminent aeronaut on this side. "Show us how to do that, and we will soon perfect the proper machine for extended flight."

It will be noticed, however, that, though there is little doubt as to the self propelled airship being the aerial machine of the future, neither Langley nor Maxim has risked his own person on even an experimental trip. The "aviators" may be theoretically correct—doubtless are—but our Santos has thus far led them all by the nose in actual flight.

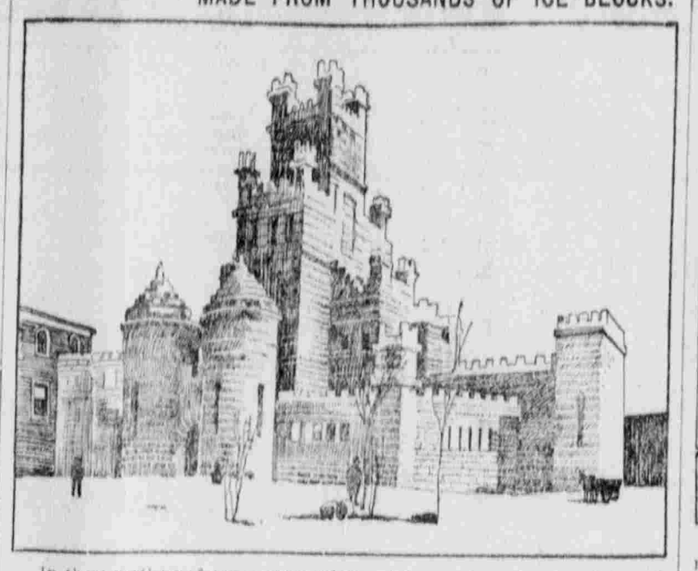
WILLIAM K. ARTRON.

Monaco.



SANTOS-DUMONT.

A BEAUTIFUL CANADIAN WINTER PALACE MADE FROM THOUSANDS OF ICE BLOCKS.



In those portions of our country where winter comes early, stays late and keeps ice and snow in evidence all the time such a beautiful creation is possible as is shown in the illustration herewith. In its erection thousands of blocks of ice are used, each block a gigantic crystal, and the whole translucent structure, especially when illumined by electric lights, looks more like a creation of fairyland than of this mundane sphere. Every Canadian winter sees its ice palace rising amid the snows, and in its construction many men are employed for weeks. The people of milder climes have hardly a conception of the hardy sports that are to be indulged in during a long, cold winter where the ice holds firm until well toward the spring.

AN OLD WAZIRI TOWER.

This ancient watchtower stands in the country of the Waziris, an Afghan hill tribe on the western frontier of the Punjab. It is one of many scattered over that region and was used by the rebel tribes as a means of defense. The

Waziris have been under British suzerainty since 1895, but a few months ago their martial spirit broke loose. They raided a British camp for loot, cleaning out everything in sight, and then retreated to the hills. In order to bring them to a realizing sense of their condition four columns of Indian troops, 1,500 strong, have been sent after them, and some interesting developments are expected soon.

A BISHOP AND A COUNT.

The original of the portrait in this illustration is not only the youngest man of his rank in Austria, but he is also the only noble bearing the title of bishop. Count Nicolaus Szechenyi, who has been a bishop for several years, is a lover of classical music, a fine performer on the piano and still under forty years of age. Much is predicted of him.

PRINCE NICHOLAS OF GREECE.

Prince Nicholas of Greece, the third son of King George I., not long ago astonished both common people and royalty by winning a prize for a comedy in blank verse in a contest open to all competitors. The most interesting fact about it is that nobody but himself knew who the author of the comedy was, and when he modestly stepped forward to receive the prize the judges were astounded. Prince Nicholas is thirty years of age, and, though he can sketch prettily and write dainty verse, he was not thought to possess uncommon literary ability.

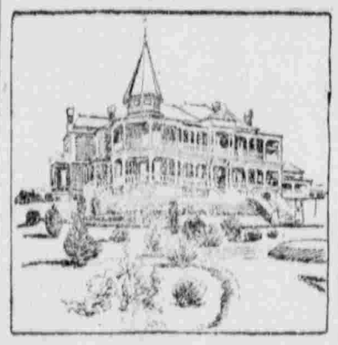
CONDOR, LARGEST OF BIRDS.

The condor, or gigantic vulture of the Andes, is one of the largest of known birds, so far as spread of wings goes, some species having an alar extent of eleven feet. It frequents the higher atmosphere, from 10,000 to 12,000 feet above the general level of the earth and is found only in America between the equator and the strait of Magellan. Like all the tribes of vultures, it is a carrion feeder and delights in the filthi-

est food, preferring dead carcasses to live animals. It gorges to such an extent that it can then be easily captured by means of the lasso. This illustration is one of the finest ever made and is after a drawing from life.

LORD KITCHENER'S HEADQUARTERS.

Lord Kitchener has been frequently commiserated on account of the trials he is undergoing with the Boers in South Africa, but he has been pretty well cared for in the main, as a glance at the illustration will prove. His



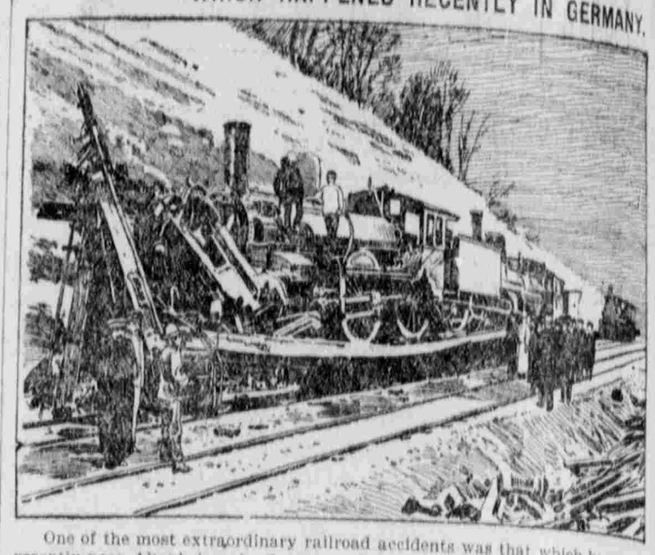
headquarters at Johannesburg are described as not only comfortable, but luxurious, consisting of a private mansion of ample proportions set in the midst of extensive grounds in the suburbs of the city. In point of fact, although Lord Kitchener has had a very trying time at intervals and seems about as far as ever from accomplishing the end desired, he is far better off than when he was fighting the "fuzzy wuzzies" in the Sudan.

Each year 1,095,000 persons succumb to consumption.

LIGHTHOUSE LIFE IN THE WINTER SEASON.

Not a few of the 1,300 lighthouses and beacons under control of the United States lighthouse establishment on both coasts of the country are in exposed situations. Some of the sites have been divested of previous structures by gales and hurricanes, and every winter many stations are stormbound for weeks at a time. Lighthouse life is lonely and monotonous at its best, but when the structure bearing the light is on an isolated reef or rock the peril becomes actual and sometimes imminent. With such lights in the stormy season communication is only kept up and men transferred in the manner shown herewith, the men being landed by means of a spar rigged as a crane.

AN EXTRAORDINARY RAILROAD ACCIDENT WHICH HAPPENED RECENTLY IN GERMANY.



One of the most extraordinary railroad accidents was that which happened recently near Altenbeken, in Germany. It seems that a train was proceeding with a locomotive in front and another at the rear of the last car. Owing to some obstruction on the track, it was halted unexpectedly, when another train coming behind it ran into the rear engine and forced it entirely through the car in front, wrecking it completely and killing nearly all within. The rear engine was driven by the collision directly upon the platform or framework of the wrecked car, in which position it was made the subject of the photograph from which this illustration was taken.

SHOES STRUCK BY LIGHTNING.

The shoes shown in this illustration were struck by lightning and considerably damaged while they were on the feet of some little girls who were singing in a choir. Several of the girls

were rendered unconscious by the electric fluid, one of them nearly losing her eyesight and another having her face scorched and her shoulder badly burned: but, aside from these hurts, they escaped without damage, except to the shoes they had on, which were badly used up.

DE BLOWITZ, FAMOUS CORRESPONDENT.

Henri Georges Stephane Adolphe Opper de Blowitz, to give him his full name, is now in his seventieth year and has been connected with the London Times as correspondent for more than thirty years. He was born an Austrian, but became a naturalized Frenchman in 1870. He has a town house on the Boulevard des Capucines, Paris, and a summer retreat in the country of the lower Seine. It is needless to recount his feats as a journalist-correspondent, for they have become famous and range through a period extending from the Franco-German war to the present time. He has the reputation of having sent the treaty of Berlin to The Times before it was signed, of causing the defeat of De Lesseps by revealing a plot in Egypt and of predicting the Russian invasion of Herat. His total contributions to his paper aggregate more than 4,000 columns. He is an officer of the Legion of Honor and a doctor of philosophy.

The hay harvested in the United States in 1901 amounted to 51,000,000 tons.

AUTOMATIC REGULATOR CLOCK.

It is thought that the nearly perfect timepiece is found in this clock, which is an improvement on one invented sixty years ago. Its chief feature is its simplicity and economy of operation, as it is moved and regulated by electricity obtained directly from the earth and is therefore the cheapest clock in the world to run. There are no springs or

weights, and it has but three wheels, which are driven by a pendulum. Attached to this pendulum is a brass cylinder containing more than two miles of copper wire. This wire, moving with the pendulum over a magnetic bar, is in contact with a lead pipe connected with a water main, thus forming an excellent collector of electric currents. The wire, after supplying the clock, is conducted into the earth again, thereby forming the essential circuit.

REAR ADMIRAL M. T. ENDICOTT, CHIEF OF NAVY YARDS AND DOCKS.

When Secretary Long declared his intention of reappointing Rear Admiral M. T. Endicott chief of the bureau of yards and docks in the navy department, it evoked strong opposition from the officers of the line owing to a long standing grievance between the two branches of the service. As chief of the bureau mentioned Engineer Endicott ranks as a rear admiral by courtesy, but as a civil engineer he has been declared to have few equals in the world. Since he took charge more than $15,000,000 has been spent for work in his department, and he has shown that he is possessed of great skill and erudition. He has been in service now for more than a quarter century.

INTERESTING BITS.

The Tyrol, following the example of Norway, is trying to encourage the winter tourist business by offering better facilities for sports.

The federal census shows a preponderance of males equal to 1.2 per cent of the total population.

Grizzly cubs born in captivity are almost impossible to raise. Of twenty-three born at Cincinnati only one lived.

So ancient is the city of Damascus, in Syria, that there is no record of its origin in any written histories.

The Seattle assay office has handled $55,000,000 since its establishment.

The Vienna municipality has agreed to purchase the Metropolitan tramway company for, it is said, $20,000,000. The tramway lines thus to be municipalized are nearly 101 kilometers in extent.

A group of American capitalists have proposed to the Paris municipality to build gasworks for the city and supply the illuminant at prices varying from 2d. to 1½d. per cubic yard.

A convincing alibi was recently furnished by a man in France. He was charged with the murder of a girl at Nice, and he brought conclusive evidence to show that he was at the time committing a burglary at a hotel.

A French minister of justice proposes to reform the obscure legal phraseology, which is even worse in France than in England and substitute plain, straightforward sentences which even the most uncultured people will be able to understand.

It is said that in France 88,000,000 picture postcards pass through the post-office annually. That country takes the lead of all the others, Austria-Hungary coming next, with 31,000,000. The total in circulation throughout the world in one year is said by experts to be 2,360,000,000.

All the transportation in Venice is done by gondolas, big and little. The freighting and delivery service is carried on by means of barges built on the same lines as the gondolas, and merchants either send the goods of their customers home that way or in panniers upon the backs of men.

The biggest induction coil known has just been completed in Paris by an electrical engineer for the Russian government. Whereas very powerful coils only give a spark from twenty-five to fifty centimeters long, the apparatus in question produces one eighty centimeters in length. It is nearly one meter long and consists of seventy kilometers of wire. This gigantic coil is to be used for wireless telegraphy.

The distribution of bread and milk among children up to six years of age has been inaugurated in Budapest. The distribution takes place morning and evening in a bystreet. The milk is first boiled in four large boilers, whence it runs into a cooling apparatus. Fifty children are allowed to enter at a time, either with their mothers or alone, while the others wait for their turn in a neighboring warmestube, another charitable institution.

There are 1,000 halls and corridors in the Vatican and 11,000 rooms, counting everything, the quarters for the Swiss guards, the stables for the horses, the storehouses for gardeners' tools, the mosaic factory and other workshops, and it is said that an average of 2,200 people are employed under the roof, most of them being lodged there. This includes the Swiss guard.