

MY AIR-SHIPS. By A. Santos-Dumont. (New York: The Century Company. \$1.40 *net.*)

THOSE who read this unique story unhesitatingly will attribute M. Santos-Dumont's success to his marvellous courage and persistence. That he has succeeded cannot be denied, although, of course, the solution of the problem of aerial navigation has not been completed by any means; but he certainly has made more progress in this direction than any one else, and has accomplished many wonderful and daring feats. His courage is not merely of the variety that makes a man fear no danger; but he has implicit belief in his own ideas, and does not hesitate to risk his life to prove that his theories are practical, and that his work is well done. Yet there is nothing of the egoist in his story; the part which relates to his triumphs as an air-ship builder and navigator is as simple and unassuming as that which tells of his

boyhood on his father's coffee plantation in Brazil. When he makes up his mind to do a thing there is no rest for him or those around him until it is done, and he is never content to rest on his laurels; brilliant as his achievements have been, he is impatient to conquer more worlds. All his trials and triumphs are detailed in this volume, which is interesting as a story of a life full of incidents, and is also a valuable contribution to the history of contemporary science. It is sufficiently technical to be accurate, but is not at all abstruse, and numerous pictures and diagrams make it all clear as well as interesting to the average reader.

He begins his story at the coffee plantation in San Paulo, Brazil, where he was born in 1873, and incidentally explains how coffee is prepared for the market; then he passes on to his visit to Paris, in 1891, tells how he tried to secure a passage in a spherical balloon, how he was deterred by the high price charged, and how he persisted until he attained his desire. This was the first step, and since then he has made rapid strides, having built ten air-ships of different styles according to his own ideas, and all have made successful voyages, one, "No. 6," winning the Deutsch prize, which amounted in all to 125,000 francs, and resulted also in the award to him by the Brazilian government of a like amount and a gold medal. Some of the machines have been wrecked; but his accidents on the whole have been comparatively few.

Perhaps less will be said about them when air-ships are as common and as practical as automobiles. If we share the views of this intrepid air-navigator we may believe that this day is by no means the day that never comes, for, as he "guide-roped" up the Avenue of the Bois one morning before the break of day, he had a vision of the future, which he translates into this calm prediction:

"So, some day, will explorers guide-rope to the North Pole from their ice-locked steamship after it has reached its farthest possible point north. Guide-roping over the ice-pack, they will make the very few hundreds of miles to the pole at the rate of from forty to fifty miles per hour. Even at the rate of thirty miles the trip to the pole and back to the ship could be taken between breakfast and supper time. I do not say that they will land the first time at the pole; but they will circle about the spot, take observations, and return — for supper!"

He learned early in life that trouble in machinery usually was due to agitating devices, and that the more easily handled and more serviceable rotary movement produced better results; so he believed and believes now that the air never will be conquered by flapping wings or any device of a flapping nature. M. Santos-Dumont long has been an enthusiastic automobilist, and his experience with motors has been of great advantage in handling his air-ships. His first cruise in one of his own machines was on Sept. 18, 1898, in "Santos-Dumont No. 1;" but, because he acted against his own judgment in starting, the air-ship crashed against some trees. Two days later he tried again, ignoring advice, and made a good ascent. This was the beginning of his real success, and each subsequent ship has shown improvement. In "The Omnibus," which is No. 10, he has arranged accommodations for passengers, hoping that in this way he may popularize aerial navigation. In reading one cannot help imbibing some of the author's enthusiasm and expecting to see his hopes soon realized.

FRANK LESLIE WELT.