THE DEVELOPMENT OF THE AIRPLANE

The navigation of the air has occupied the mind of man from the earliest centuries. In Classic Mythology there is the story of Daedalus and Icarus who escaped from prison by means of wings made out of feathers and fastened on with wax. The story reads like a remarkable anticipation of the exploits of aviators in recent times. In his "Locksley Hall" Tennyson prophesies the invention of the airplane:

> "Saw the heavens fill with commerce, argosies of magic sails, Pilots of the purple twilight, dropping down with costly bales;

> "Heard the heavens fill with shouting, and there rain'd a ghastly dew

From the nations' airy navies

grappling in the central blue." Towards the close of the nineteenth century several men turned their minds towards the field of aviation. Such men as Professor Langley of the Smithsonian Institute in Washington, and Sir Hiram Maxim, the inventor of the Maxim gun, thought the proper method of attacking the problem was to experiment with enginedriven airplanes; others, like the Frenchman, Mouillard, and Lilienthal, a German, placed their confidence in the study of gliders and the soaring flight of birds. None of these men, however, succeeded in overcoming the obstacles to successful flying.

It was reserved for two American brothers, Wilbur and Orville Wright, to succeed in conquering the air. It was their genius and their originality that first discovered the fundamental principles and control of the airplane. They found that, if the wings of planes move forward at an angle to the wind, they receive by this motion an upward sustaining force or lift which counteracts the force of gravity. After several months of experimenting the Wrights developed a theory, based on the fact that the propeller blades were themselves wings travelling in a spiral course, which solved the propeller problem. They also were successful in discovering an adequate control system, and constructed a rudder designed to prevent the plane from nose-diving. All of these discoveries were made under the greatest difficulties, involving trial and error, investigation and tabulation of thousands of details and the rejection, time after time,

of previously accepted theories.

These "Wright boys of Dayton," as they were called, without any great education and without any special training in scientific investigation, found errors in the works of great authorities of even the Royal Aeronautical Society, and dared to challenge them. And moreover, relying solely on their own slender resources, they established data regarding the fundamental science of air flow which stand correct to the present day. They received no encouragement from the people nor from the government. The people even went so far as to class them with the adherents of the theory of perpetual motion.

Confident of ultimate success, however, the young Wrights bore with patience the slurs of common opinion. Their first taste of success came in the fall of 1902, when at Kitty Hawk Beach, North Carolina, almost one thousand gliding flights were made, several of which covered distances of over six hundred feet. Their first flights with a powered machine were made in December of the following year. Finally on October 5th, 1905, at Hoffman Field, Dayton, they made a circular flight of twenty-five miles. From that time on people began to take a new interest in the idea of flying and when Orville Wright made his famous flights at Fort Meyer, he was given a semi-official reception at the National Capitol, and the crowd took for its slogan, "I'd rather be Wright than President."

Since then the airplane has been gradually improved. During the latter part of the war it played a most important part as a fighting machine. To-day it is rendering service in the survey and fire protection of vast areas of forest; in the south it is being used in the spreading of deadly calcium arsenate to fight the boll-weevil. And it is daily coming into greater use as a carrier of mail and passengers. The most noted flight of modern times, namely, that of Colonel Charles A. Lindbergh across the Atlantic Ocean, connecting in a few hours the old world and the new, is but the final realization of the efforts of those Wright boys, whose patience and whose indomitable courage in the face of difficulties and disappointments in the end gained for them fame and fortune.

-W.A.R., '31