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The Man and the Bird

Professor Langley, the distinguished scientist—all scientists are distinguished—scorns delights and lives laborious days in study of the flight of birds. His notion is that he can steal their secret and make use of it in a flying machine. The professor has already made a flying machine which flew, but it resembled a bird mainly in not carrying passengers and freight.

There are two types of “airship,” the flying machine and the dirigible balloon. The former is good for nothing; the latter can be made to carry a man, and will go where he wants it to if he is good. The difference is worth remarking, slight as it is, for it marks a difference in study-methods. Inventors of the flying machines study the flight of birds; those of the dirigible balloon do not. M. Santos-Dumont probably cannot tell a hawk from a handsaw. That is why he can fly.

It should have been clear that nothing was to be got from a study of birds. By reasoning from analogy one should have known that. If in evolving the locomotive engine Stephenson had addressed himself to study of the movements of animals he would probably have invented some most ingenious engine running upon jointed legs with several experimental kinds of feet, but not an inch would they have budged. If only nature’s crude and clumsy methods of locomotion had been studied, the automobile, the railway engine, even the primitive cart, would remain uninvented. The master genius who invented the wheel so far surpassed nature that none of her work is entitled to honorable mention in comparison. He was the founder of civilization.

Suppose the steamship had to be invented de novo—invented, not evolved. Doubtless the gentleman charged with the task would make a study of the aquatic bird, the duck. The swimming duck is partly submerged—is in the water and in the air. It is propelled by its own power, with or against the wind. These are the conditions and powers that he proposes to reproduce in his steamship. How natural that he study the duck, particularly its means of propulsion. So he did—and produced the canoe and its paddle. Now that the duck is forgotten, we have the steamship and its screw propeller.

In submarine navigation the “lessons of nature” have been profitably disregarded; the submarine boat is nothing like a fish. It does not balance itself with fins, nor move forward by wiggling its tail. It hasn’t any tail. All that the flexible tail of the fish has taught us is how to scull a boat, the least effective form of propulsion.

All this ought to show Professor Langley that in studying the flight of birds he is “barking up the wrong tree.” After many years of that study we have as a result the aeroplane. Between whose fixed and disobedient rigidity and the infinitely delicate adjustability and activity of the bird’s wing there is a barely traceable likeness.

He is a hardy and impenitent skeptic who dares to doubt that we shall have the flying machine, as distinguished from the dirigible balloon; but in all probability the man who first successfully navigates one of his own devising will be a person who knows something of the properties of atmospheric air, a good deal of mechanics and very little about birds.