THE

CANADIAN MAGAZINE

VOL. XXXIV TORONTO, FEBRUARY, 1910 No. 4

EVOLUTION OF AERIAL CRAFT

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FROM being considered the rambling dreams of insane inventors, aerial flight has now developed into a most practical reality, and all within the last decade. It has been related of Benjamin Franklin, that when he was experimenting with kites in order to ascertain whether lightning could be drawn down from the clouds, he took a youngster along with him to avoid the ridicule that would inevitably fall upon him were he seen indulging in such a childish pursuit as kite-flying. But all this is past, and now an inventor in England or on the Continent may experiment with kites or aeroplanes to his heart's content. The facilities for flying in England are very limited, and the conservative Englishman has not, up to the present, helped the inventor in any way to test his invention. An experimenter, some months ago, was trying out his machine on some marshes. A constable interfered with him, and warned him off the short grass, as he was attracting a crowd. The inventor considerately promised not to use his machine when there was a crowd about, so he made his flights in the early morning, and was again warned off by a policeman for running over some long grass that was going to be cut for hay. Again he went on to the short grass, and again he was warned off, so now he is looking for other flying grounds. The ground referred to was a public open space owned by a certain local council. This is only one of the innumerable instances in which the authorities have endeavoured to assist the new science, and no doubt experimenters sigh for the broad expanses available in Canada.

In discussing this subject, there are four distinct types of aerial craft, unlike in principle and construction. There is the airship proper, the machine which has an envelope of gold-beater's skin or other balloon fabric inflated with hydrogen or coal-gas, and which supports a *nacelle* or framework containing the propelling machinery, steering-gear and aviators. Then there is the aeroplane which, as the name signifies, has planes which give it a lifting effect similar to that which we sometimes observe in birds when soaring. This machine is usually driven by an internal combustion engine, revolving one or more screw propellers. The third is the helicoptère, a machine which is lifted by means of horizontal screws on vertical shafts. The fourth is the ornithoptère, an apparatus designed on the principle of the bird, and provided with a mechanical system for operating flapping wings, on which depends its horizontal and vertical movement Of the machines thus classified, there are as yet only two that have proved themselves to be practicable. These