

electric motor, which is equal to about $\frac{1}{30}$ of an E.H.P. Now, it follows that, if $2\frac{1}{2}$ lbs. is required to develop $\frac{1}{30}$ E.H.P., it is obvious that 50 lbs. weight would be required for 1 E.H.P.; and this is assuming the high efficiency of 16 watts per lb. of accumulator. He has apparently found out, judging by his answer 5, that batteries, except for ignition purposes, are useless for aeroplane work; and, it seems to me, any sentence with reference to accumulators and electric motors, such as was used by Mr. Kay in connection with aeroplanes, is, unless qualified, very misleading, and likely to incur experimenters in useless expense. I did not ask Mr. Kay as to every type of aeroplane he has made. What I wanted was the classification by him of the various types as used by him in the flights, as stated in his letter of the 15th ult.; and my letter of the 26th ult. was not intended to be sceptical. I shall follow any competitions for model aeroplanes with interest, so that I may have the pleasure of congratulating him upon any success that may attend his efforts.

Yours faithfully,

Belfast, Feb. 8th.

WALTER N. CATON.

AN 11-YEAR OLD "GENIUS."

To the Editor of FLIGHT.

SIR,—Will you spare a few of your valuable moments to read the enclosed "essay," written by a little girl of eleven? I think it will amuse you, if it does not interest you.

She goes to the root of the matter when she speaks of "resisting gravity." We should apply the principle, not yet discovered, and shoot upwards, I suppose, and then "beat the air by pressure" to travel parallel to the earth. If a second Sir Isaac Newton should come forward to solve this "mistrey," we shall visit Mars before long. Should you think the paper worth printing in FLIGHT, as a set-off to more serious matter, pray use it.

The grammar and spelling leave much to be desired, but the whole thing is funny. Certainly gravity is inconvenient sometimes, especially when daring children climb cherry trees, or aeronauts fall victims thereto.

Believe me, yours sincerely,

M. C. T.

[Enclosure.]

"Essay on the Aro Plane.

"I do not dispute the fact that aro planes will become as popular as moters, for undoubtedly they will. Did not peopl say it was madness for moter cars to be in popular use? Then, why should not Aro planes? I would invent something on that account if I were a genius, and why should I not venture to put forth to the public a hint? That if only something were discovered to resist gravity, discovered by Sir Ixa Newton, Oh! that genius! if he had only lived to discover other things, that are at present shrouded in deepest mistrey. As I said before, gravity is an inconvenience in some circumstances, but, What should we do without it? Something should be invented to resist it. Could not some chemist or professor or some such geniuses, make by certain means some metallic substance, that would resist it? Certain, there is something in trying to beat against the air by pressure, testing atmosphere etc, but would not gravity be more interesting a subject, an easy mistrey to solve, at least to someone destined to solve this mistrey. I ertestly hope that the person so destined will discover it in my day so I may understand it myself.

CHRISTINE CROSLAND TAYLOR."

MAKERS OF AERO MOTORS WANTED.

To the Editor of FLIGHT.

SIR,—I should esteem it a great favour if you would kindly permit me, through your columns, to ask all manufacturers of aeronautical motors, now or about to be put on the market, to be good enough to forward particulars of them to these offices for the information of members.

Yours truly,

T. O'B. HUBBARD, Assist. Sec.

Aeronautical Society of Great Britain.

53, Victoria Street, Westminster, S.W.,
Feb. 5th.

NOMENCLATURE—BIBLIOGRAPHY.

To the Editor of FLIGHT.

SIR,—I am much interested in your new journal, not in the sporting parts, but in the engineering and descriptive sections. One or two points have been raised in your correspondence columns on which I hope I may be allowed to say something.

I agree with your correspondent who objects to the word aerodrome being applied to a practising ground for aeroplane machines. Experimental aeroplane machines have been called aerodromes

since 1896 at least, and Prof. Langley's successful model was so described. To attempt to attach a new meaning to a word which has already a definite well-known meaning can only lead to confusion.

Another evil in nomenclature, though one of a different kind, is the growing number of such names as Aero Club, Aero League, Aeroplane Club, and so forth, both at home and abroad. The names represent the evil of a multitude of rival organisations for which there is no need. So far as this country is concerned I can see no use for more than two, or at most three, organisations. The Aeronautical Society should be quite sufficient for those concerned in the scientific and engineering side of the subject, and the Aero Club for those associated with the sporting side. The third association which may be desirable is the League for pushing forward a moribund Government in regard to aeronautics for naval and military purposes.

In regard to the desirable work of compiling a bibliography, I would suggest to you, sir, that an application to the secretary of the Aeronautical Society must result in your obtaining a list of the books in the library of the Society. I do not know the extent of the library, but as the Society has been in existence since 1866 the collection ought to be a good one.

Pending the results of such an application, I have pleasure in giving here, in addition to those mentioned by Mr. Challenger and others, such references as I have at command.

In 1895 the publication was begun, by W. B. Clark and Co., Boston, Mass. (London agents, W. Wesley and Son, 28, Essex Street, Strand), of *The Aeronautical Annual*. I have the volumes for 1896 and 1897, and they contain valuable articles by Lilienthal, Maxim, Langley, Chanute and others. Historically, these volumes are of great importance, and the illustrations are first class. The *Annual* was only published for three years, the 1897 volume being the last. The editor, Mr. Means, seems to have found difficulty in getting a sufficient quantity of good material in those days to keep it going, and no doubt the sale would not be large. All the volumes are now said to be out of print, but probably the great libraries may have copies. In an article by Mr. Chanute on sailing flight, in the volume for 1896, he gives a long list of authors and publications on that aspect of the matter. There is also a bibliography near the end of the volume. The subject of sailing flight, to which Mr. Chanute's references apply, will probably come again to the front before long, as flying machines are perfected. Then the effort will be to imitate the flight of sailing birds by remaining aloft as long as possible with the motor stopped, deriving both support and driving power from the wind.

The American Engineer and Railway Journal, from October, 1894, to August, 1895, inclusive, contains, under the heading *Recent Aeronautical Publications*, a series of valuable lists. M. N. Forney, publisher, 47, Cedar Street, New York.

Progress in Flying Machines, by Octave Chanute, published by M. N. Forney, 47, Cedar Street, New York, 1894—long a standard work.

L'Empire de l'Air, by L. P. Mouillard, 1881. This is a record of years of observation on the flight of sailing birds.

Experiments in Aerodynamics, by the late Prof. S. P. Langley, 1891.

The Internal Work of the Wind, by Prof. Langley, 1893.

In regard to Professor Langley's two books, these are still in print. They can be obtained in London from Messrs. W. Wesley and Son, 28, Essex Street, Strand, who are the British agents for the sale of all publications connected with the Smithsonian Institution of Washington, D.C., United States (with which Langley was connected). I learn also that the following interesting collection is now on sale, and at a low price, and that it embodies many of the facts contained in Langley's larger works:—

Researches and Experiments in Aerial Navigation, by the late Prof. Langley. Plates and engravings. 8vo., 1908. 3s. net. (Consists of reprints and papers issued in the reports of the Smithsonian Institution.) Published in London, by W. Wesley and Son.

Recent Experiments in Gliding Flight is the name of an article by Mr. Chanute, published in *The Aeronautical Annual* of 1897, and in a pamphlet published a year or two later he described subsequent experiments.

Some Aeronautical Experiments, by Wilbur Wright, a paper read before the Western Society of Engineers (of America), September 18th, 1901. In the light of what has since happened, this paper is of extraordinary interest. It shows that in 1901 the Brothers Wright had evolved, in connection with their gliding machines, two at least of the main principles characteristic of their present motor-driven machines, namely, the forward horizontal rudder and the warping of the main surfaces to aid in steering and in lateral stability.*

[* This paper was reproduced in *The Automotor Journal* in February and March, 1902.—ED.]