CORRESPONDENCE.

To the Editor of the AERONAUTICAL JOURNAL.

DEAR SIR,—There are two points of interest in connection with the Langley machine which appear to have been overlooked in Mr. Griffith Brewer's paper and also in the discussion which followed.

The first point is, that Langley was attempting to fly in 1903 with a machine having a loading of about 13 ounces to the square foot. I do not know whether this is an impossible task or whether it has ever been performed, but it would be interesting to know whether, in addition to attempting to fly, Langley was not trying to make a performance which has never even yet, with all the flying experience of to-day, been accomplished, namely to fly with a loading of less than 1lb. to the sq. ft.

The other point will only be within the knowledge of visitors to the U.S. Museum at Washington. There, in the hall, two models are suspended, one model that of Hargrave, which is labelled "Hargrave Flying Machine. Driven by compressed air engine. Flew 312ft. at Clifton, N.S. Wales, in 1891." This model hangs in a modest little corner shaded by the gallery of the Museum. Out in the open, lighted by the windows above the gallery, is suspended the larger Langley model, labelled as follows:—"Langley Flying Machine. The first successful flight made by a machine heavier than air driven by its own power was made by this steam flying machine on May 6, 1896, at Quantico, Virginia, over the Potomac River, with a steam pressure of 150 pounds."

What I should be interested to know, would be what the word "successful" means on the Langley model. If you omit the word "successful," the label is obviously incorrect, because the Langley model did not make the first flight by a machine heavier than air driven by its own power, because of Hargrave's model which did this five years earlier. There is some subtle difference, therefore, in the word "successful," which distinguishes the Langley model from the Hargrave model, and for the benefit of the general visitors to the Museum it would be well to have some explanation of the Smithsonian definition of the word "successful." Is it the same as the word "substantially," or "practically"? As the well-known judge once said, when he was told that a door was "practically" shut, he knew very well it was open. No doubt the word "successful" refers to the duration of the flight and the size of the machine. It would apparently relate to the duration only, because when the Hammondsport machine was tried at Hammondsport later and flew less than 312ft., it was "successful" according to the official report. What may therefore be successful in a large machine is apparently not successful in a small one. No doubt some of the Smithsonian scientists can help to elucidate the meaning of this elusive word.—Yours truly,

JAMES GUTHRIE.

750, Prospect Avenue, Cleveland, O.
January 5, 1922.

Berlin Lichterfelde,
Marthastr 5.

To the Editor of the AËRONAUTICAL JOURNAL.

Dear Sir,—Many thanks for sending the AËRONAUTICAL JOURNAL, the contents of which has found my greatest interest.

As I have always been the fellow worker of my deceased brother in his aeronautical researches, I am well informed about the proceedings in the investiga-

tions of flying. Please permit me to take part in answering the question: "Who is the inventor of the flying machine?"

As Mr. Handley Page quite right mentioned, every invention is based upon the preparatory work of several students. This preparatory work may it be purely scientifical or refer to mechanical appliances to introduce science into practical use, can be traced to every invention. It has always been the habit to spend the laurel to the victor in the race to success and I have never declined to call the Brothers Wright as the true inventors of the flying machine.

If Mr. Langley would live now and claimed to be the real inventor I am sure the world would laugh at him, but as far as I am informed he never rose this claim.

His apparatus did not fly because it was not properly constructed, and the novelty in the construction, the vaulted section of the wings, was no invention of Mr. Langley's, but of the Brothers Lilienthal. Mr. Langley got his information about the increased lifting force and favourable direction of the resulting air pressure by the book, "Der Vogelflug, als Grundlage der fliegekunst," published 1886 by Otto Lilienthal under my assistance, and by our personal information when he called at us 1895. We showed to him our stock of gliders and my brother made several glides at our experimenting place at Lichterfelde. Myself gave the explanations in English language.

Although the Brothers Wright got also one of our gliders which had been ordered by Mr. Chanute and they made their first experiments with our apparatus, I do not deny to them the glory of inventorship. They have made the first man flying from the ground and with this fact the dispute must stop.

If the claim of the Smithsonian Institution should succeed my brother and myself could just as well be entitled to raise the same claim. Our gliders, when driven forward by a screw propeller, would have been able to fly, but at that time, before 1896, we were not able to secure a motor light and powerful enough for this purpose. We had been dealing with Mr. Benz, of Stuttgart, who built the first explosion motors, but he declined to construct a motor that could suit our demands.

Our investigations and measurements of the air resistance on vaulted planes goes as far back as 1872. They are published in the above-mentioned book. A second edition is published in England, "Bird Flight," by myself.

You will see that flying has been made possible not only by the vaulted wings and not only by the light and powerful motor, but by both factors, and the man who brought both means to an harmonic combination is entitled to be called the inventor of the flying machine.

There is no doubt that the Wrights have been these men.

I am, Dear Sir, yours truly,

GUSTAV LILIENTHAL.

You would oblige me to send enclosed letter to Mr. Griffith Brewer, whose address I don't know.—G.L.

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