For by the conditions obtained θ is the same in both A and B. Hence $S = \left(\frac{C}{C_1}\right)^2 = \left(\frac{r_1}{r}\right)^2$, where r_1 and r are the resistances of the two circuits. It is obviously unnecessary to make the resistances, and the masses of liquids, equal, but the equation is thus simplified. If a smaller mass of water, m, be taken, then $S = \frac{m}{M} \cdot \left(\frac{r_1}{r}\right)^2$, thus increasing the delicacy of the method.

Since in the adjustments a considerable amount of time would be necessary to allow the calorimeters to attain thermal equilibrium after each trial, the following modification may prove more simple and more practical :—

The calorimeter B is arranged so that by a switch-key, C, the current can be diverted through a wire of exactly equal resistance, b, so that the current is the same by either path. The resistance from D to E is the same either way. The key F is pressed down for a time, t,

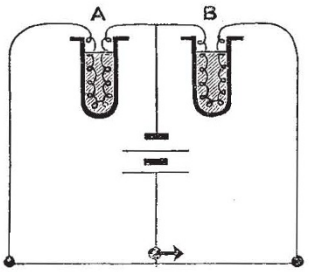

FIG. 2.

until the needle is largely deflected; then the current is switched from B and passed through A alone, until the needle is just brought back to zero, in total time, T. Then, neglecting for the present the slight error due to cooling, in A . . . $\theta M = \frac{C^2RT}{J}$, in B . . . $\theta MS = \frac{C^2Rt}{J}$, $\therefore S = \frac{t}{T}$.

Since T and t can both be made large, this should give very accurate results. It is evidently especially applicable to the measurement of the rate of increase of specific heat with temperature, since the liquids may have any initial temperature.

In conclusion, I may say that I should not have published this method in such an incomplete state, and unsupported by experiment, but I noticed to-day (September 5) that Profs. Stroud and Gee intend to read a paper before the British Association on "A Null Method in Electro-Calorimetry," and it is possible this may refer to a similar method.

GEORGE N. HUNTLY.

THE HESSIAN FLY.

I AM sorry to say that reports from correspondents acquainted with the attack of the Hessian fly show its presence now in an almost continuous line along the northern and eastern coast from Cromarty on the Moray Firth in Scotland down to Kent.

I have this morning received specimens of the *puparia* from the parish of Urquhart, in Morayshire, the most northerly locality from which I have at present received the so-called "flax-seeds."

The amount of presence varies very much. In the locality above mentioned (that is, the district from Aberdeen to Cromarty), the traces of attack are reported as to be found from 25 to 30 miles inland, but the injury slight, not more than one straw in fifty being affected, and the grain of fair quality. It is severe in some parts of Perthshire, and is found also in the eastern counties adjacent.

In East Lothian, Haddington, and Berwickshire attack is only reported from a few places at present, and in Northumberland from one locality.

Beginning again on the two sides of the Humber the attack widens much in area as it is traced south. It passes through Lincolnshire and Cambridgeshire, touching an easterly part of Northamptonshire, till it extends over the district commonly known as the eastern counties, including besides great attack in Hertfordshire, and some in Bedfordshire; and it also occurs in Kent.

In the southerly or westerly parts of England it occurs at Lymington and Petersfield in Hampshire, and to a considerable extent near the College of Agriculture, Downton, near Salisbury; and I have one report of it from near Bridgwater, and it also occurs at Goring Heath, Oxfordshire.

The above localities are where I know of its presence from specimens sent to myself, or, in a few cases, from information given me by correspondents whom I know to be acquainted with the appearance of the *puparium*, and the characteristics of the attack.

It very likely may occur elsewhere, but I am only just giving a general sketch of extent of infested area from personal knowledge.

It strikes me as a very curious point that the attack should so markedly cling to the sea-side, excepting in a few isolated instances, or where the inland area is continuous with the sea-side district.

It is very satisfactory to observe that although the season has been so altogether *extraordinarily* favourable to various kinds of insects affecting corn-stems, yet that in very many instances reported to me the injury caused to wheat by Hessian fly has been slight

On this fact I venture to think we may ground a hope that, either from the varieties of wheat which we use being kinds suited to do what is called "resist" attack, or from circumstances of our cultivation, we may find that our wheat at least does not suffer as much as in some other countries.

Also the enormous prevalence of the two stem attacks caused respectively by the corn sawfly (*Cephus pygmæus*), and by the dipterous fly, the *Chlorops tæniopus* (attacks which far exceed in amount any which have been brought under my notice as caused by these insects), give a hope that the climatal circumstances which usually prevail here will have an effect in checking the attack of the *Cecidomyia destructor*, as well as the above-named crop pests, as we see that all three kinds have been exceptionally thriving in the exceptional heat and drought.

It is unnecessary to point out to your highly informed and thinking readers that the statements now appearing of the *Cecidomyia destructor* having been a corn pest in this country for many years have not the slightest foundation.

ELEANOR A. ORMEROD.

THE BRITISH ASSOCIATION.

MANCHESTER, *Tuesday Evening*.

ABOUT the success of the Manchester meeting there seems to be only one opinion. In mere numbers—the most popular gauge of success—it has by several hundreds surpassed all former meetings; the number of tickets sold very closely approaches 4000. As a natural result, the amount of money collected and available for the purposes of research is unprecedentedly great, as will be seen by the list of grants which have been allotted to the various Committees. The great increase in attendance over all former years is to a considerable extent due to the large number of foreign visitors, who have formed a marked and prominent feature of the present meeting. In the proceedings of nearly every Section the representatives of foreign science have taken an active