name, and anything they knew about it One of these, a Galway woman, speaking Irish better than English, gave me the name in her language (which I won't attempt to transcribe, for it was a very long one), and also said that the animals were well known to jump down people's throats to their certain destruction. C. BUSHE.

Athenæum, December 24.

## The Great Ice Age.

THERE is in the Astronomical theory of the Ice Age a point of some importance, not mentioned by Sir Robert Ball in his interesting work on this subject, to which I invite the reader's attention. I mean *the slowness with which the difference between the length of summer and that of winter is varying in the neighbourhood of its maximum.*

To compute this difference and its mean value, we put

$a$ = the mean distance of the earth from the sun,
$e$ = the eccentricity of the earth's orbit,
$\omega$ = the longitude of the perihelion of the earth's orbit,
T = the length of the year in mean solar days,
$\Delta$ = the difference between the lengths of the two seasons in mean solar days,
$\eta$ = the mean value of this difference during the interval between the two dates, corresponding to $\omega = \omega_1$ and $\omega = \omega_2 > \omega_1$.

Then, the eccentricity remaining always extremely small, the difference between the areas of the two segments in which the line of the equinoxes divides the earth's orbit, may be put—and with sufficient accuracy,

$$= 2ae \,.\, 2a \sin \omega = 4a^2 e \sin \omega.$$

Hence, we find, by Kepler's first law,

$$\frac{\Delta}{T} = \frac{4a^2 e \sin \omega}{\pi a^2 \sqrt{(1 - e^2)}},$$

and consequently, by neglecting the third and higher powers of $e$,

$$\Delta = \frac{4Te \sin \omega}{\pi}.$$

Observing that the eccentricity remains sensibly constant for a period of time, which is doubtless to be reckoned by many tens of thousands of years, we obtain, by means of the formula just found,

$$\eta = \frac{4Te}{\pi} \int_{\omega_1}^{\omega_2} \sin \omega d\omega : \int_{\omega_1}^{\omega_2} d\omega$$

$$= \frac{4Te}{\pi} \,.\, \frac{\cos \omega_1 - \cos \omega_2}{\omega_2 - \omega_1}.$$

Finally, by substituting the numerical values of our constants, we shall have the following formulæ for computing $\Delta$ and $\eta$ :—

$$\Delta = 465e \sin \omega,$$

$$\eta = \frac{465e (\cos \omega_1 - \cos \omega_2)}{\omega_2 - \omega_1},$$

positive values designating that in the Northern Hemisphere and negative values that in the Southern Hemisphere the summer exceeds the winter.

From the first formula we deduce that, for a given eccentricity, the disparity in the lengths of the seasons shall be as great as possible when the line of the equinoxes is perpendicular to the axis major of the orbit. Now, putting $e = 0,071$, the maximum eccentricity, the values of $\Delta$ and $\eta$ for a few values of $\omega$ are as follows :—

| $\omega$ | $\Delta$ | $\omega_2 - \omega_1$ to | $\eta$ |
|---|---|---|---|
| ° | | | |
| 90 | ... 33 | | |
| 85 or 95 | ... 33 | 95 – 85 | ... 33 |
| 80 or 100 | ... 32½ | 100 – 80 | ... 33 |
| 75 or 105 | ... 32 | 105 – 75 | ... 32½ |
| 70 or 110 | ... 31 | 110 – 70 | ... 32 |
| 65 or 115 | ... 30 | 115 – 65 | ... 32 |
| 60 or 120 | .. 28½ | 120 – 60 | ... 31½ |
| 55 or 125 | ... 27 | 125 – 55 | ... 31 |
| 50 or 130 | ... 25 | 130 – 50 | ... 30 |
| 45 or 135 | ... 23 | 135 – 45 | ... 29½ |

If we remember that the longitude of the perihelion increases in about twenty-one thousand years from 0° to 360°, then, it will be seen by inspecting these results that, for example, during the interval between the two dates corresponding to $\omega = 65°$ and $\omega = 115°$, *i.e.* during a period of nearly three thousand years, the mean difference between summer and winter will be thirty-two days, and that during this period the difference itself will never sink below thirty days. N. L. W. A. GRAVELAAR.

Deventer, Netherlands, December 17.

## Aggressive Mimicry.

IN his last letter Mr. Poulton observes that I am one of "four recent writers" who have made use of the collections in the Natural History Museum and the Museum of the Royal College of Surgeons, for the purpose of illustrating the phenomena of mimicry between *Volucella* and *Bombex*. This is the case, but I should like to add that the species which I have depicted are not *V. bombylans* and *B. muscorum* (the questionable resemblance of which in nature, and the erroneous labelling of which in the "show cases," constitute the grounds of Mr. Bateson's somewhat "aggressive" criticism on other "recent writers"), but *V. bombylans* and *B. lapidarius*, where the fact of resemblance can admit of no doubt ("Darwin and After Darwin," p. 329). Indeed, Mr. Bateson fully recognizes the close similarity in appearance between these two species; and, as I refrained from giving the hypothetical explanation of it to which he objects, I avoided all the issues which have since been raised in the NATURE correspondence.

Madeira, December 15. GEORGE J. ROMANES.

## Artificially Incubated Eggs.

I HAVE been repeatedly informed by poultry-growers and market-men that hens raised from artificially incubated eggs were much less fertile than those produced in the natural way. My information has been derived from persons who did not even know each other. It occurs to me that if true it is a curious matter and worthy of some attention.

W. WHITMAN BAILEY.

Brown University Herbarium, Providence, R.I.
December 10.

## *THE PROPOSED UNIVERSITY FOR LONDON.*

A GENERAL meeting of the Association for Promoting a Professorial University for London was held on Wednesday, December 21, when a report, which we print below, was presented by the Executive Committee. We would call the attention of our readers to the penultimate paragraph of this report, which indicates the existence of an agreement, on matters of principle between the Senate of the University of London and the Association.

The last general meeting of members of the Association was held on June 14, 1892, when the Executive Committee presented for approval a series of proposals for the organization of a University in London. These proposals were adopted as the formal expression of the objects of the Association.

Since that meeting the efforts of the Committee have been directed to the furtherance of the principles embodied in the above-mentioned proposals—by endeavouring to obtain the adhesion of literary and scientific men, and of other persons interested in the matter; by organizing a body of evidence to be presented to the Gresham University Commission, and by such other means as have suggested themselves from time to time.

Immediately after the last general meeting, Prof. Huxley became a member of the Association, and consented to accept the office of president. Sir Henry Roscoe and the Master of University College, Oxford, consented to become vice presidents; and the first of these gentlemen has since been an active member of the Executive Committee.

The number of members of the Association is now one hundred and fifty.

Evidence in support of the principles of the Association has been given before the Gresham University Commission by the following gentlemen :—Prof. Ayrton, Mr. F. V. Dickins, Prof. G. C. Foster, Principal Heath, Prof.