Ed. Eppelsheim, Mr. Edmund Reitter, and Mr. J. Weise, each of whom is responsible only for his own part, which is designated.

In comparing it with the third edition of 1883, a vast number of changes in specific names is notable, and many long familiar ones have been relegated to synonymy. Antiquity seems to have been extensively ransacked, and many entombed names have been stripped of their cerements and brought to the light. How science is to be benefited by all this is not evident, but if it has to be done, the quicker the better. Had the code of nomenclature adopted by the British association in 1842 and again in 1865, and by the Association of American geologists and naturalists in 1845, making the XII edition of the Systema naturae (1766) of Linnaeus the limit of time from beyond which no name could be advanced, and according to which the specific names in both the European and American catalogues were first recorded, much of this confusion could have been avoided. But this being set aside, every one is free to do as he pleases, and frequently the brief and imperfect descriptions of the ante-Linnaeans are made to apply in an imaginary way to insects common and long known by other names, which are at once dropped, and the semi-imaginary ones substituted, to the intense disgust of many who fail to perceive how science is to be benefited. It is not beyond hope that in time a limit in this direction may be reached. A fire goes out when the fuel is all consumed.

This catalogue is of some interest to American coleopterists, as it advances many new names for species common to the two hemispheres, as for example: Our abundant *Philonthus aeneus* must hereafter be called *politus* Linn., and our *politus*, *fuscipennis* Mann.; *Orphilus glabratus*, a world-wide name, must be replaced by *niger* Rossi; *Nitidula bipustulata*, by *bipunctata* Linn.; *Xestobium rufo-villosum* DeG., is to supersede *tessellatum;* and the imported elm-leaf beetle, *Galeruca xanthomelaena* becomes *luteola* Mull, etc. Justice has been done Mr. Say in placing his *Phylethus bifasciatus* in the catalogue, but injustice in advancing *Bruchus irresectus* Fahr. over his *obsoletus*.

It evidently requires immense labor, research, much entomological knowledge, and calm, unbiased judgment to produce a satisfactory work of this kind, and it can scarcely be doubted the authors have fairly succeeded. JOHN HAMILTON.

TEMPERATURE EXPERIMENTS WITH MOTHS.

The Transactions of the Entomological society of London for 1891, Part i, give some recent experiments made by Mr. F. Merrifield on two double-brooded species of Selenia. We extract the following general conclusions.

1. That both the marking and the coloring of the perfect insect may be materially affected by the temperature to which the pupa is exposed.

2. That the *markings* are chiefly affected by long-continued exposure, probably previous to the time when the insect has begun to go through the changes between the central inactive stage and emergence.

3. That the *coloring* is chiefly affected during the penultimate pupal stage, i. e., before the coloring of the imago begins to show.

4. That a low temperature during this penultimate state causes darkness, a high temperature during the same period having the opposite effect.

5. That, in the species operated on, a difference between 80° and 75° is sufficient to produce the extreme variation in darkness caused by temperature, a further lowering of the temperature having no further effect on it. . . .

6. That in these species dryness or moisture during the pupal period, whether during a low temperature or a high one, has little or no effect on the coloring of the imago. . . .

The results obtained appear also to indicate that probably some local climatic varieties, and even seasonal varieties, may be found to be, in part at least, temperature forms of the individual; and, looked at from this point of view they appear to me to lend some support to Lord Walsingham's theory as to the advantages derived by an insect in a cold region from being of a dark color, for they show that, if that is an advantage, it is one that can be acquired, not only by a race for use in a cold locality, but by individuals for use in a cold season. I think it is quite clear that if a cool week supervened in southern England between the beginning and the middle of July, or a hot week in the middle of April, at either of which times many of the pupae of illustraria would be in what I have called the penultimate pupal stage, most of these insects which it found in that stage would have their coloring affected. It would appear that even two or three hot days, if they came exactly at the right period, would be enough for the purpose; and I need hardly observe that it is very unlikely that these are the only species that would be so affected.

There is another general suggestion which I venture to make in concluding. If Prof. Weismann's theory is accepted, that the existing forms of most European and some North American Lepidoptera have come to us from a glacial period or climate, and that icing the pupa causes the insect to "throw back" to its earlier form, then experiments of the kind tried on the pupae might assist us in tracing the evolution of the markings on the wings of some of the most highly developed forms.

In a postscript he adds:—

I am now able to add that the coloring of the spring emergence of illustraria is as much, or nearly as much, affected by temperature during the penultimate pupal period as is that of the summer emergence. This has been established in case of three different broods, portions of each having been subjected to temperatures of 60° and 80° respectively; the latter often in coloring very closely approach the light chestnut-orange summer type. This is interesting in reference to Prof. Weismann's theory, that in cases of this kind, the moth from the summer pupa can be caused to resemble that from the winter pupa, but not *vice versa*, as it shows that *either form* is equally ready, on the suitable temperature stimulus being applied, to assume the characteristic appearance of the other, *so far as coloring is concerned*. In other respects my observations are in accord with that theory. Thus, I have never been able to cause the moth from the winter pupa to take the *markings* proper to the moth from the summer pupa, whereas the moth from the summer pupa can be made in markings to resemble almost exactly that from the winter pupa; nor have I been able to cause the moth from the winter pupa to emerge in a period approaching in brevity that of the summer pupa; indeed, in the great majority of cases, the early and continued exposure of the winter pupa to a temperature of 80°, or even 60°, caused its death.

Some Abnormal Larvae.—One larva of *Thyreus abbotii* had a single, thick, stiff hairlike bristle, arising from the tip of the caudal tubercle, all through the third moult, the second and fourth moults being normal. Another larva of *T. abbotii* kept the whitish green coloring of the early moults until it pupated, the only change of marking being a vague lateral line slightly darker than the body, and the usual changes of anal tubercle. *Caroline G. Soule.*

Another Deidamia inscripta.—On July 13th on *Ampelopsis veitchii*, I found a larva so like *Everyx myron* that I put it away as such, though it had no purplish spots on the back. It differed from last year's specimen in having faint yellow obliques, and in having the yellow lines from the head extending nearly to the eleventh segment. The pupa, formed on July 17th, was like that of last year, except that it lacked the spur near the