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## THE NOCTUIDÆ OF NORTH AMERICA AND EUROPE.

(First Paper.)

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We have seen in several of my previous papers that the Owlet Moths, or *Noctuidæ* of temperate North America, the United States and Canada, resemble most strongly those of Europe. The divergence lies chiefly in the greater number of species belonging to the *Noctuidæ fasciatæ*, or *Catocalinæ*; and this is a tropical feature, such forms becoming more plentiful as we go southward, although *Catocala*, the typical genus of the group, does not seem to cross the equator, to which latter fact I have already called attention. Forms allied to *Phococyna* (*Homoptera*) and belonging to this group, intrude into the European fauna, on the coasts of the Mediterranean. From the fact that the Southern States reach into the sub-tropics, the mountain chains forming no cross barriers, there is no impediment to the range of southern moths, and a greater number of species and genera of these extend into Canada and the north. The resemblance between the *Noctuinæ*, or *Noctuæ nonfasciatæ* of Europe and North America, can be traced in that the leading European genera are represented with us, and the species are even more numerous. Such leading genera, about which genera of less importance cluster, are *Apatela* (*Acronycta*), *Agrotis*, *Hadena*, *Mamestra*, *Heliothis*, *Eustrotia* (*Erastria*, Tr. non Hübn). The genus *Catocala* has in North America its metropolis, where the number of forms, species and varieties reaches its maximum. The fact that the forms run very close seems to illustrate the observation that in the North-American fauna there exists an evident tendency to the differentiation, or throwing off of species. Instances of this may be cited in the Lepidoptera, in the genera *Argynnis*, *Colias*, *Papilio*, *Hemaris*, *Callimorpha*, *Datana*, *Clisiocampa*, *Scopelosoma*, among many others. As compared with the North-American species of