

posed by Prof. Comstock, and the division into superfamilies which I have suggested and which Mr. Grote has adopted with improved nomenclature\*, let us see where the families of "Bombyces" fall.

From the JUGATÆ, we find the Hepialidæ only, the most highly specialized Jugates in respect to the abortion of the mouth parts. From the FRENATÆ as follows :—

*Superfamily Tineides.*—The Eucleidæ, Megalopygidæ, Anthroceridæ and Pyromorphidæ from the apex of development along the main stem ; the Psychidæ, Lacosomidæ and Heterogynidæ, side branches, but all specialized (the much specialized Sesiidæ went with the Sphingidæ), and finally the Cossidæ, a low type, but of large size.

*Superfamily Agrotides.*—All the families, except those called Zygænidæ, the Agrotidæ and Geometridæ, the two latter (with the exception of the Notodontidæ) the lowest types in the superfamily.

*Superfamily Bombycides.*—The whole group.

*Superfamily Sphingides.*—None, this group being recognized as distinct, although the Sesiidæ and Thyridæ were associated with it.

*Superfamily Papilionides.*—None.

Thus it will be seen that the Bombyces consisted of the higher types in all lines of development, regardless of relationship. If we imagine the genealogical tree of Lepidoptera as growing upright from the ground, the several branches and twigs representing the families and being of length proportional to their degree of specialization, the old classification would be represented by *horizontal* planes. The uppermost would cut off the very summit of the tree, the Papilionides ; the next would take the next succeeding top branches, perhaps the Sphingides, and the tip of a side branch from the Tineid trunk, say the Sesiidæ. The next cut might give the old Zygænidæ, consisting of some families from the Agrotid and Tineid trunks, and the fourth cut is our Bombyces, taking branches of all the trunks that are approximately equal in degree of specialization. The base of the tree would comprise the rest of our old familiar families, the Noctuidæ, Micros, etc.

It is the aim of more recent work to follow the lines of genealogy, a classification cutting our imaginary tree in *vertical* planes, including in each group all families related to each other in the same line of descent, regardless of degree of specialization.

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\*Syst. Lep. Hildesie, 1895.