by the emerging insect and leaves its contents on the forehead. Pupae in which fully formed moths had died without emerging show, on dissection, the empty cell with a sediment adhering to the forehead of the insect not only in *T. polyphemus*, but in *A. yama-mai* and other species of *Antherea* I have been able to examine in this condition.

With a view of determining the question, I prepared a number of *polyphemus* cocoons by removing the outer layers and cutting a narrow slit on opposite sides to near the head, so that when suspended in the light the motions might be watched, and in two instances have been able to see, though rather imperfectly, the whole performance. As before stated, the moth on breaking the pupa-skin carries on its forehead a drop of liquid, which, as the moth lengthens itself in the effort to free the fore legs, is smeared upon the end of the cocoon, and during the twisting and squirming accompanying this effort, well rubbed in. After freeing the legs the moth rests for a moment; then, pushing up one shoulder, turns several times in the cocoon, the shoulder being pressed against the smeared part. The result of this appears to be to loosen some of the fibres, for after two or three repetitions of this movement, the legs are extended upward and the abdomen extended, forcing the shoulders more firmly against the cocoon and a vigorous clawing begun; this is succeeded by a butting movement, the abdominal segments being first retracted and then forcibly extended, followed by more twisting, clawing and butting, until a small hole is made, when the butting movements predominate and the moth finally emerges, pushing the cut ends of the threads outward.

So far as I have been able to observe, the hooks in the wings merely serve to detach the fibres and hold them in place until broken by the powerful legs, the removal of the gum and weakening of the silk by the liquid on the head rendering this comparatively easy—this possibly being aided by the surplus fluids of the pupa being brought up during the retraction and extension I have called "butting," but whether this is really the case or not I am unable to state. A similar cell is observable in all pupae of this family, and it seems probable that they all emerge in the same manner, employing neither wholly chemical nor mechanical means, but both.

NOTE.—It is but fair to add that since these notes were prepared I have seen mention of a paper by Mr. Packard on the same subject, but as it is not in general circulation, have been unable to see the paper in question.