

tifully soft grey velvet or short plush. The surface is perfectly even and very smooth to the touch. Since the specimen was received I have shown it to a great many, and until placed under the microscope together with one of the feathers with which the pile was made, it has proved altogether too much for anyone's credulity to believe that it was the work of insects. When magnified, however, the identity of the minute threads of the pile with the portions of the plumules of the feathers with which the pillow-case had been formerly stuffed, is made quite evident. The pillow-case was made of ordinary strong cotton ticking, conspicuously striped with wide blue, and narrow black and red stripes. After the remarkable operation described below the blue and red stripes were entirely obliterated, and the black stripes could only be discerned faintly through the feather felting. Miss Eaton gives the following particulars with regard to this new fabric:

"The pillow was made in the fall of 1889 and was filled with turkey feathers, which as you probably know are very downy near the base, and it is with portions of this down that the pillow is covered. The pillow was made in 1889 and I opened it in the winter of 1891, during that time it had very little actual use. People who slept on this pillow made no remarks about it; but I found it in the morning more often on the floor than in the bed. It remained for about six months in an unused room, when one day thinking nothing of the matter I placed it on my own bed and I found that I actually could not sleep for the noise, which was like something crawling slowly back and forth. I turned it over several times; but it always seemed right under my head. Then I began to think that I had discovered the reason why other people had thrown it on to the floor so often, and I myself threw it out of bed. I then left it alone for about six weeks and tried it again; but the noise was still there. I then put it on one side thinking that when I had time I would open it and get the insects for my collection. It was some time before I found a convenient opportunity, I then took it into an empty room, put a sheet on the floor and cut open the pillow-case and was much surprised to find it in the condition you see by the specimen I send you. The feathers were entirely stripped of their down. It was the insects I was looking for though, so I stirred the feathers up with a stick and the fine particles of down rose in such a cloud, that I was obliged to tie a towel over my nose and mouth to keep from being choked. From the noise that I had heard and the destruction, I looked for an insect about the size of a grasshopper at least; but saw nothing but the little thing I send. There were about a hundred; but I saved only a few. I could not believe that I had found the right insects, I thought they must be larger. I did not actually see the insects alive amongst the feathers but only found the cocoons."

Miss Eaton kindly forwarded me specimens of the injured feathers and also cocoons of the moth *Tinea pellionella*, which she had taken from the pillow. These cocoons show under the microscope that they, like the felting of the pillow-case, are also composed of the debris of the injured feathers.

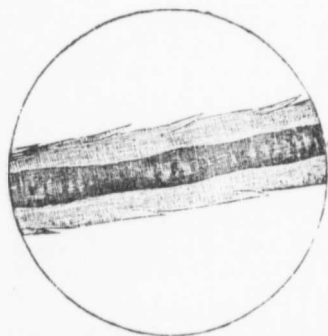


Fig. 34. Beaver fur magnified 250 diameters.

The minute bristles of the plumules of feathers, when examined under a microscope show plainly their barbed nature by which they serve so admirably the purposes required of them in causing the plumules to adhere lightly to those touching them in the feather to which they belong; but at the same time allowing the plumules to be separated without injury, and then binding them together again. It is owing to these very barbs on the particles, that the felting of the cotton pillow-case was possible, the feathers having been cut up into fine morsels, these are rendered sufficiently rigid in proportion to their length to work their way through the feathers little by little, every time the pillow is moved, by reason of their barbs which all point one way, until the pillow-case is reached, here, if short enough, they work their way a short distance into the cotton cloth and remain fixed there by their barbs. The beautiful evenness of the pile is, I imagine, due to the fact that unless the particles are very short they will not be

rigid enough to character is found of felt as This is fully explained in Mr. only this, but a

Miss Eaton States Entomology some interesting occasionally seen of the felting of said to have been and the inside the breaking up a Dermestid beetle fine specimen of *Tinea pellionella* membered in the action of the felting up into small pieces of the pillow held by their barbs accidental felting commercially used in the America another instance destroyed by growth of downy sembles; it is

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2. *Tinea* a case, which spots on the v

3. *Tinea* mixed with f within this ga which are bla