

really greatly elongated scales, the shank being a very attenuated cylinder, while the tip is sometimes dilated, club like, and sometimes fan-like, but never very much enlarged. The shorter they become the more distinct is the scaly character of these pencils; but for convenience and as expressive of their actual appearance they will be referred to as tufts or pencils of hair.

The femur in this tribe is quite usually supplied with a pencil of long hair, attached to the upper side near the tip and lying in a groove which includes nearly all there is of the femur. In length this pencil equals the trochanter and femur combined, and when at rest it folds back, the femur is applied to the coxa, and the groove is thus closed. By this application of the femoral groove to the groove in the coxa the pencils of hair on these parts lie together in what is then a closed cylinder or elongated capsule. When the leg is extended the femoral pencil may be erected and expanded fan-like, forming in many cases more than three-fourths of a complete disk. The tibial process quite frequently covers another pencil of similar hair which, while it may be dilated, spreads out loosely in all directions and not fan like. Quite usually, when no distinct pencil of hair is present, the process covers a loose mass of specialized shorter scales, while huge scales fringe the edges of the process. The latter folds around the elongated first tarsal joint, which is often grooved to conceal or protect the tibial tuft. No tufts of hair or scales are on the tarsi.

A specimen with its fore legs extended and all the pencils of hair expanded is a curious and interesting sight. *Zanclognatha larvigata* and *Chytolita morbidalis*, both common species, have these tufts well developed.

What purpose do these structures serve? That they are sensory is reasonably certain, from the facts that they are connected with specialized pittings and are so carefully provided with protective coverings when not in actual use. In my earlier writings I called them "scent organs," following those German authors who consider them "Duft apparate." The suggestion is, that certain glands connected with these pencils secrete some substance which is odorous and which through the pittings or pores of the integument bring their secretions into contact with the pencils of hair, by means of which the odor is gradually diffused. That this odor is connected with the sexual function is universally assumed; but just how, is not so clear. It can not be that the odor is meant to attract the female, for the attraction is the other way, and the male seeks out the opposite sex. If the tufts came into play in courting it would seem as though there should be some corresponding organ for the appreciations of the odors in the female; but I have entirely failed to find any such. In actual copulation there seems no function that could be filled by these structures. They must be, for the present, classed among those appendages with the use of which we are not fully acquainted. It is indeed remarkable that