

LASIUS (ACANTHOMYOPS) PLUMOPILOSUS, A NEW ANT
WITH PLUMOSE HAIRS FROM IOWA

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Lasius (Acanthomyops) plumopilosus sp. nov.

FEMALE

Length, 4.6 mm.

Head excluding the mandibles very nearly as broad (.97 mm.) as long (1.00 mm.), with very feebly excised posterior border and slightly convex sides. Eyes convex, hairy. Mandibles 6-dentate. Head without a frontal furrow. Scapes nearly reaching the posterior corners of the head, gradually thickened distally. Funiculi less incrassated than in *claviger*, joints 2-10 broader than long, the penultimate joints very little broader than long. Thorax 1.70 mm. long, .87 mm. wide (across the wing insertions); mesonotum and scutellum forming a nearly flat surface above. Epinotum with a very short base and steep declivity. Petiole small, its superior border faintly notched and blunter than in *L. (A.) claviger* and *interjectus*, the scale a little less than two-thirds as high as the epinotum. Gaster long, the sides subparallel. Head and body in profile formed about the same as in *claviger*. Tibiae and femora flattened, fore femora about 3 times, middle and hind femora about 4 times, as long as broad. Wings 5.4 mm. long.

Whole body strongly shining with pilosity and pubescence arising from punctures. Mandibles finely striate.

Pilosity extraordinary, nearly all of the erect hairs plumose or at least branching at the tip. Plumose hairs best developed on the head, thorax, petiole, and mid-dorsal region of the first gastric segment. Pinnules of the hairs in no case covering more than the distal half of a hair, in many cases not covering more than the distal one-fourth or one-sixth, and in many cases on the gaster merely 3, 4, or 5-branched at the tip. Number of pinnules on well-developed plumose hairs about 8-15. Hairs present on the clypeus, on the front in a fringe pointing inwardly, on the vertex, occiput, gula, pronotum, prosternum, on the mesonotum in a fringe pointing inwardly, on the scutellum, mesepisternum, mesosternum, metanotum, epinotum, and petiole; very numerous on the gaster including the ventral side of the first segment (bases of contiguous hairs on the gaster about .04-.10 mm. apart). Succeeding gastric segments on the ventral side with a row or two of hairs along their posterior margins. Also

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present although much smaller and fewer on the coxae, trochanters, and fore femora. Length of hairs about .16-.20 mm.; of well-developed pinules, about .03-.04 mm. Pubescence rather sparse on most parts of the body, denser on the legs, antennae, ventral surface of the pedicel, and base of gaster. Second and succeeding gastric segments with bands of very fine, short pubescence on the anterior margins, changing posteriorly into sparser, longer pubescence. Pubescence on the genae and gula very long, strong, sparsely set, and subappressed.

Color much darker brown than in the females of *interjectus* and *latipes*, the head and thorax appearing brownish black to the naked eye; not as dark, however, as in some specimens of *claviger*.

WORKER

Length, 3.2 mm.

Head, excluding the mandibles very nearly as broad (.93 mm.) as long (.94 mm.), with a very slightly excised posterior border and convex sides; widest across the middle of the head. Mandibles 6-dentate. Eyes hairy, slightly convex, with about 45 ommatidia. Scapes not quite reaching the posterior corners of the head. Funiculi incrassated, joints 2-9 at least slightly broader than long, joint 10 about as broad as long. Thorax with the shape of *claviger*; 1.16 mm. long and .58 mm. wide (across the pronotum); meso-epinotal suture relatively shallow. Petiole not quite as high as the epinotum, the superior border notched and about as blunt as in *claviger*; having about the same shape as in *claviger* when seen from behind; anterior surface convex, posterior flat. Femora and tibiae flattened, fore femora about 3 times, middle and hind femora about 4 times, as long as broad.

Whole body very shining. Mandibles finely striate.

Many of the erect hairs plumose or branching at the tip, although not as much as on the female. Plumose hairs best developed in a row on the occiput, on the pronotum, mesonotum, epinotum, and mid-dorsal region of the first gastric segment. Hairs present whether plumose or not on the clypeus, front, occiput, gula, pronotum, mesonotum, epinotum, petiole, coxae, and fore femora; numerous on the gaster including the ventral side of the first segment. Succeeding segments on the ventral side with a row or two of hairs along their posterior margins. Length of hairs about .10-.15 mm. Pubescence sparse, denser on the legs, coxae, and antennae. Second and succeeding gastric segments with bands along the anterior margins of very fine, short pubescence. Pubescence on the genae and gula very long and strong.

Color sordid yellow, mandibles and funiculi more brownish.

MALE

Length, 3.2 mm.

Head excluding the mandibles little broader (.80 mm.) than long (.75 mm.), broader behind than in front, with rather convex posterior border and very slightly convex sides. Eyes hairy, very convex, situated

on the sides halfway between the corners of the head. Mandibles with 6 teeth, but counting from the basal border, only numbers 4, 5, and 6 on the right mandible and numbers 3, 5, and 6 on the left mandible very distinct. Frontal furrow distinct. Antennae long and slender, the scapes surpassing the posterior corners of the head. Funiculi with first joints swollen, other joints cylindrical, joints 2-11 very gradually increasing in length. Thorax 1.42 mm. long, through the wing insertions less broad (.74 mm.) than the head. Declivity of the epinotum more sloping than in the female. Petiole with a very sharp border, its anterior surface slightly concave and its posterior surface slightly convex. Wings 4.2 mm. long, discal cell absent.

Less shining than the worker and female; the head and thorax finely punctate and subopaque.

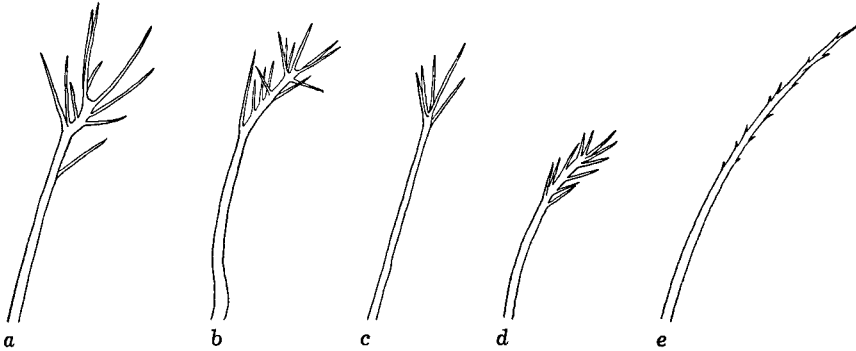


FIG. 1. *L. (A.) plumipilosus* hairs: a and b, from mesonotum of female; c, from abdomen of female; d, from pronotum of worker. *L. (A.) claviger* hair: e, from thorax of female.

Hairs sparser, and more slender than in the worker and female, a little longer (about .11-.16 mm.) than in the worker; not plumose generally, although several hairs on the clypeus, vertex, occiput, mesonotum, and scutellum branching at the tip. Pubescence more sparse than in the female and not as varied in size.

Color very dark brown appearing black to the naked eye. Head and mesonotum very nearly black. Funiculi and legs infuscated yellow.

VARIATION IN TYPE MATERIAL

Both females and workers vary somewhat in the plumosity of the hairs, in the arrangement of the hairs, and in the location of the most plumose ones. In general, however, they are as described. There is little difference in size in either females or workers. Several of the paratype females, however, have the gaster wider and larger than in the holotype. The discal cell of the fore wing is very variable, being either present, incomplete, or absent. The holotype has the discal cell present on the left wing, absent on the right. The shape of the petiole varies also; one female seems to be without even a slight notch on the superior border, which is evenly rounded above.

Described from a series of 8 alate females, 6 workers, and 1 male taken from a colony nesting under a hillside rock at Backbone State Park, Iowa, September 13, 1940.

Holotype female, 1 paratype female, 2 paratype workers, and the paratype male are to be deposited in the National Museum, Washington, D. C.; 3 paratype females and 2 paratype workers are to be deposited in the Iowa State College collection; and 3 paratype females and 2 paratype workers are to remain in the author's collection.

This species appears to be closely related to *L. (A.) claviger* from which it can be separated very definitely by the following points: (1) the highly specialized plumose hairs of the female and worker, (2) the smaller size of the worker and the decidedly smaller size of the female and male, (3) the 6-dentate mandibles of the male, and (4) the much less incrassated funiculi of the female, the penultimate joints being only about 1.1 times as broad as long, whereas in the females of *claviger* that the writer has measured the penultimate joints are 1.3 to 1.4 times as broad as long. Other differences include: (1) the very abundant hairs on the gaster of the female, (2) the proportionately shorter hairs on the female and worker, (3) the more highly specialized pubescence on the female and worker, (4) the less flattened femora and tibiae of the female, and (5) the proportionately more slender body of the female and male.

Two other species of the subgenus *Acanthomyops*, *L. (A.) interjectus coloradensis* Wheeler and *L. (A.) interjectus mexicanus* Wheeler, also have very small females 5 mm. long or less, very small workers about 3 mm. long, relatively short antennae, and males with dentate mandibles. From Wheeler's descriptions of *coloradensis* and *mexicanus*, *plumopilosus* can probably be distinguished by at least the following points: (1) the highly specialized plumose hairs on the female and worker, (2) the edentate basal border of the mandibles in the female and worker, (3) the shorter antennae, the scapes not reaching the hind corners of the head, (4) the much more numerous hairs, especially on the gaster of the female, than on *mexicanus*, at least, (5) the greatly varied pubescence which is also decidedly less profuse than on *mexicanus*, and (6) the more flattened legs of the female and worker. Future comparisons of these two forms and especially of *coloradensis* with *plumopilosus* will perhaps throw more light on the latter's affinities.

As far as the writer has been able to ascertain, this is the first recorded instance of plumose hairs in the Formicidae. At least this type of pilosity is very rare among ants. However, examination under the highest power of the binoculars shows some females of *L. (A.) interjectus*, *claviger*, and *latipes* to have hairs with a very poorly developed type of plumosity consisting of short, very tiny, rather suberect pinnules which tend to be scattered along the length of the hair rather than collected distally. Short, very tiny pinnules can sometimes be seen on the hairs of the workers of *interjectus*, *claviger*, and *latipes*, also. The author has not had the opportunity of examining specimens of *claviger* subsp. *subglaber*, *occidentalis*,

murphyi, or any of the subspecies of *interjectus* and so cannot make any statements regarding them.

Many of the North American *Lasii* of the subgenera *Acanthomyops* and *Chthonolasius* are considered to be temporary social parasites of the varieties of *L. niger*. The very small size and extraordinary pilosity of the females of *plumopilosus* seem to suggest, however, that this species may be a more highly specialized parasite than other species of this genus.