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A REVISION OF THE FORMS OF *STIGMATOMMA PALLIPES*

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Although the habits of *Stigmatomma pallipes* have been repeatedly studied none of these publications have been of much service to those who wish to deal with the taxonomy of this interesting species. This paper is an attempt to bring together and evaluate the scattered taxonomic publications which deal with *S. pallipes* and its variants. Although references to this insect have repeatedly appeared in articles of a descriptive character there seems to be no adequate description of the typical form. The ease with which this insect may be recognized and the fact that it is our only species have fostered the notion that a thorough description is not necessary. At one time this may have been true, but the subsequent recognition of several geographical races has made it imperative that the characteristics of the typical form be more clearly defined.

The status of the several North American variants of *Stigmatomma* is by no means easy to determine. Unlike most other ponerines which occur in this country *Stigmatomma* does not increase in abundance as one goes southward. It is difficult to find in the Gulf States, where other ponerines occur in abundance. It appears to be absent in southern Florida and the Brownsville area in Texas. There are no representatives known from Mexico or Central America and only a single species, the Cuban *bierigi*, from the West Indies. Other New World species of *Stigmatomma* occur in southern Brazil, northern Argentina and northern Chile. The situation is, therefore, quite unlike that characteristic of most of our ponerines which are properly regarded as northern fringes of Neotropical groups. This discontinuous distribution, which is characteristic of the genus as a whole, is scarcely less striking in the case of the North American representatives. The range of *oregonensis* is strictly limited to the coastal region of the Pacific Northwest. Its nearest neighbor from a spatial standpoint appears to be the form described in this paper as *subterranea*, which occurs in central Kansas. The Kansas variant is scarcely less isolated from the eastern *pallipes* whose range does not seem to extend west of Michigan. As I shall show in a subsequent paragraph there is some reason to believe that the ranges of the variants are not as widely separated as our present scattered locality data would indicate. Yet it is true that to the present there are only two forms whose ranges are adjacent. The range of the typical *pallipes* borders upon that of the form herein described as *montigena*. Where these two forms come in contact is produced the intergrade which Santschi has called the variety *wheeleri*. Because of this consideration I have treated all the forms of *S. pallipes* as subspecies because I believe that they are geographical races. According to my view the status of this complex is as follows:

1.—*S. pallipes* Haldeman (1844)
= subsp. *arizonensis* Wheeler (1915)
var. *wheeleri* Santschi (1913) = hybrid *pallipes* × *montigena*
2.—Subsp. *montigena*, new subsp.
3.—Subsp. *oregonensis* Wheeler (1915)
4.—Subsp. *subterranea*, new subsp.

Before passing to the descriptions I wish to comment on a peculiarity of the subspecies *subterranea* which may lead to an alteration of our views concerning the ecology and distribution of this group of forms. It has been generally assumed that *pallipes* and its variants are limited in their distribution to areas which are characterized by considerable precipitation and heavy cover. The importance of cover has been stressed by Haskins (Jour.

N. Y. Ent. Soc., XXXVI, pp. 179–184, 1928) who holds that *pallipes* has lost the ability to utilize open fields or glades as nesting sites. While this latter view is probably too extreme, it is unquestionably true that most of the published locality data for *pallipes* indicates a strong preference for moist, wooded regions. In preparing this paper I had for study a series of workers taken by me at Elmo, Kansas, in the summer of 1927. These insects, described in the present paper as the subspecies *subterranea*, were living in a small crevice between limestone fragments fully three feet below the surface of the ground. The nest was discovered by accident and, since it was laid open with a pick, all passages leading to the surface (provided there were any) had been obliterated before the ants were exposed. As to whether such passages existed is a matter of secondary importance. The significant fact is the presence of a nest of *Stigmatomma* at the edge of the Kansas prairies. The country in the vicinity of Elmo is a rolling, open area where the only trees are borders of osage orange along the edges of the fields. Cover there is none, as will be fully appreciated by anyone who has worked there under an August sun. Elmo is one of the last places where one would expect to find *Stigmatomma* if its distribution is dependent on moisture and cover. The conclusion seems inescapable that *Stigmatomma* can tolerate a much wider range of ecological conditions than has been hitherto supposed. In all probability its range includes much of the United States, but it is only in those portions of the range where abundance of cover and moisture prevail that the insect becomes epigaeic and, hence, liable to discovery by collectors.

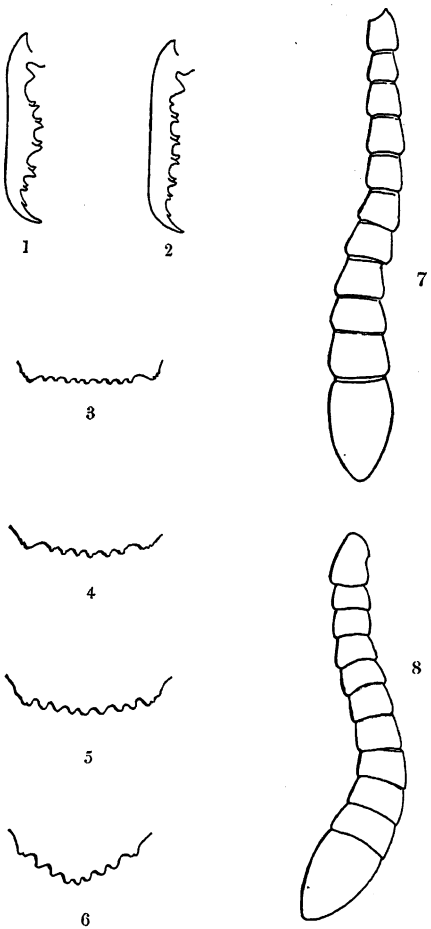

Fig. 1. Mandible of *S. pallipes pallipes.*
Fig. 2. Mandible of *S. pallipes oregonensis.*
Fig. 3. Edge of clypeus of *S. pallipes oregonensis.*
Fig. 4. Edge of clypeus of *S. pallipes subterranea.*
Fig. 5. Edge of clypeus of *S. pallipes pallipes.*
Fig. 6. Edge of clypeus of *S. pallipes montigena.*
Fig. 7. Antennal funiculus of *S. pallipes pallipes.*
Fig. 8. Antennal funiculus of *S. pallipes montigena.*

Key to the Workers of the Subspecies of *S. pallipes*

1.—The portion of the inner border of the mandible which bears the double teeth notably convex (Fig. 1).....2.
The portion of the inner border of the mandible which bears the double teeth straight or nearly so (Fig. 2) (Coastal area in the Pacific northwest).....
.....*pallipes oregonensis.*

2.—Funicular joints 2–5 almost twice as broad as long; (Fig. 8); clypeus usually strongly projecting; largest workers 5 mm. in length (mountains of North Carolina at elevations of 3000 ft. or more).....
.....*pallipes montigena.*
Funicular joints 2–5 at most very little broader than long and usually longer than broad (Fig. 7); clypeus moderately pro-

jecting or nearly straight; largest workers 6.5 mm. in length.....3.

3.—Occiput slightly but distinctly concave; median teeth of the clypeus smaller and finer than the flanking tubercles (Fig. 4); (central Kansas)....*pallipes subterranea.*

Occiput flat; the median teeth of the clypeus almost as large as the flanking tubercles (Fig. 5); (eastern Canada to the Gulf Coast and west to the latitude of Michigan).....*pallipes pallipes.*

The foregoing key does not contain the forms *arizonensis* and *wheeleri* because, as noted above, the first of these is a synonym of the typical *pallipes* and the second an intergrade between *pallipes* and the subspecies *montigena.*

Stigmatomma pallipes Haldeman

S. pallipes, HALDEMAN, 1844, Proc. Acad. Nat. Sci. Phila., II, p. 54 (*Typhlopone*) ☿.—EMERY, 1895, Zool. Jahrb. Syst., VIII, p. 261, ☿ ♀ ♂.—WHEELER, 1900, Biol. Bull., II, p. 65, Figs. 5, 6, 7, ☿ ♀ ♂.

S. pallipes subsp. *arizonensis*, WHEELER, 1915, Bull. Amer. Mus. Nat. Hist., XXXIV, p. 389, ☿.

S. serratum, ROGER, 1895, Berl. Ent. Zeitschr., III, p. 251, ☿.

Atropus binodus, PROVANCHER, 1881, Canadian Nat., XII, p. 207, ☿.

S. pallipes var. *wheeleri*, SANTSCHI, 1913, Ann. Soc. Ent. Belg., LVII, p. 429, ☿ ♀ ♂ = *pallipes* × *montigena.*

WORKER.—Length, 4.5 mm.–6.5 mm.

Head, exclusive of the mandibles, subquadrate and as long as broad. Sides very slightly narrowed at the insertion of the mandibles, more strongly narrowed toward the occipital angles, the latter well marked. The occiput appears flat in full-face view. Anterior edge of the clypeus very slightly convex or straight, the six or seven median teeth stout and conical and only a little smaller than the flanking tubercles. When the latter are completely divided the clypeus appears to be armed with nine or ten teeth of approximately equal size. Mandibles elongate, linear; their border sinuate and with the convex central portion armed with four or five pairs of teeth. In the event that there are only four pairs of teeth it is always the outermost pair which is replaced by a single tooth. In addition to the paired teeth each mandible is armed at the base by a single, large, triangular tooth. A small single, subapical tooth occurs between the outermost pair of teeth and the powerful terminal tooth. Frontal lobes large and prominent, only slightly divergent behind and enclosing between them a subcircular frontal area. Antennal scapes stout, their tips in repose surpassing a point midway between the antennal insertion and the occipital angle by an amount equal to the greatest thickness of the scape. Funicular joints 2–5 longer than broad in the large workers; in the smaller workers these joints may be slightly broader than long. Funicular joints 6–10 gradually increasing in width; the terminal joint about as long as the two preceding joints taken together. Eyes small, usually consisting of eight or ten poorly defined facets but in some specimens there may be as many as twenty facets.

Thorax seen from above with a strong constriction in the region of the mesonotum and the anterior portion of the epinotum. Pronotum oval in outline except for the concave posterior face at the promesonotal suture. Mesonotum short and strap-like, its anterior face usually less curved than the adjacent face of the pronotum but in some specimens the mesonotum may be bowed forward giving it a roughly chevron-shaped appearance. Epinotum subtrapezoidal, the sides sloping outward from the impressed mesoepinotal suture to the flat declivous face. Thorax seen in profile with only the anterior half of the pronotum convex. The posterior half of the pronotum is virtually flat and the mesonotum and basal face of the epinotum are quite flat. The mesonotum is usually slightly elevated above the remainder of the thoracic dorsum. Basal face of the epinotum considerably longer than the declivous face which it meets at a sharp angle. Node of the petiole seen from above subcircular and slightly wider than long in the large workers, more narrow and a little longer than broad in the smaller ones with the posterior border truncate. Node of the petiole seen in profile with a short peduncle which passes immediately to the steeply sloping anterior face; the dorsal and posterior faces forming a single, feebly convex surface which meets the

anterior face at a sharp angle. Ventral surface of the petiole with a large rounded lamella projecting forward and downward. Constriction between the first and second abdominal segments well marked. Sting long and powerful.

Sculpture: Mandibles and clypeus longitudinally striate and feebly shining; the antennal scapes, the entire upper surface of the head and the sides of the pronotum bearing punctures set so close together that the surface appears coriaceous and dull in most lights. Genae and gula, the dorsum of the entire thorax and the top of the node of the petiole with less numerous punctures and, hence, more shining. On the lower parts of the meso- and metaplurae the punctures are replaced by longitudinal striae. The declivous face of the epinotum is usually dull and covered by fine transverse striae but in some specimens these are so feeble that they do not dull the shining surface. Sides of the node of the petiole and the entire first and second gastric segments with small and scattered punctures and strongly shining. The remaining gastric segments strongly shining and finely shagreened but punctured only at the margins where erect hairs occur.

Erect hairs fine, abundant and short except on the posterior gastric segments where the hairs are longer and coarser. Many of the hairs are subappressed and grade into pubescence on the head, thorax, petiole and anterior gastric segments. Antennal scapes, funiculi, tarsal joints and tibiae densely covered with short, erect hairs. Femora with fewer hairs than the rest of the legs. Mandibles with relatively few hairs but those much longer and stouter than the other cephalic hairs. The clypeus usually bears two or three very long erect hairs. The border of each of the posterior gastric segments bears numerous long, erect hairs which are notably stouter than those elsewhere with the exception of the mandibular hairs. Female: Except for its much bulkier mesothorax, its notably larger eyes and the presence of ocelli the female of *pallipes* is very similar to the worker. It is usually slightly larger than the worker (7 mm.) but this size difference is by no means constant. The female and worker of *pallipes* are identical as regards the structure of the clypeus and mandibles. In the female the tip of the antennal scape in repose just fails to reach the level of the lateral ocelli. The eyes of the female, which consist of about one hundred facets, are so situated that their anterior margin lies at the middle of the side of the head (mandibles excluded). In sculpture and pilosity the female is identical with the worker. Wings hyaline, the veins yellow, the pterostigma brown.

To date I have seen only six males of *pallipes* and since these insects show considerable variations in details of sculpture, pilosity and color I am unable to decide which of them ought to be regarded as typical. Since the purpose of the above description is to establish more certainly the characteristics of the typical *pallipes* I prefer to make no attempt at this time to describe the male. In all probability the males of all the subspecies will be found to be closely similar.

The exact whereabouts of the type of *pallipes* is unknown if, indeed, it is still in existence. As Haldeman failed to give any type locality in his original description it seemed difficult or impossible to secure a precise concept of the typical form. Because of these considerations it appeared necessary to rely upon the consensus of opinion which has chosen the large eastern variant as the typical form. The above description was drawn from such specimens. Since it was prepared, however, I have had the pleasure of examining two autotypes sent by Haldeman to Harris. These valuable specimens are in the collection of the Boston Society of Natural History. I wish to express my gratitude to Dr. Richard Dow who brought the specimens to my attention and through whose courtesy I have been enabled to examine them. They prove to be identical with the large eastern form which has been generally, and correctly, regarded as typical.

In the following list of localities for the typical *pallipes* have been included those of Santschi's variety *wheeleri*. It may be

admitted that it is not impossible to discover fairly homogeneous nest series which show the characteristics of this form but more often than not its recognition involves the splitting of nest series.

Quebec: St. Joseph du Lac (G. Chagnon)
Ontario: North Bass Island (M. Talbot)
New Hampshire: Pelham (Bridwell)
Massachusetts: Blue Hills, Ellisville (W. M. Wheeler); Forest Hills (L. H. Taylor); Holliston (N. Banks); Middlesex Fells (no collector); Reading, Harvard (R. P. Dow); Naushon Island (W. M. Wheeler, W. S. Creighton)
Connecticut: Colebrook (W. M. Wheeler)
New York: Bronxville, White Plains (W. M. Wheeler); West Farms (J. Angus); Van Courtland Park, Tuxedo (W. S. Creighton); Lowville (H. Notman); Valhalla (F. M. Schott)
New Jersey: Garrett Rock (no collector); Short Hills, Lakehurst (W. M. Wheeler)
Virginia: Pennington Gap (H. G. Hubbard); Falls Church (N. Banks); Suffolk, Massaponax (W. S. Creighton)
North Carolina: Durham (A. S. Pearce); Black Mountain (no collector)
Tennessee: Camden (F. M. Gaige)
Alabama: Mobile, Spring Hill, Chicasaw (W. S. Creighton)
Ohio: Jackson County (L. G. Wesson)
Illinois: Rockford (W. M. Wheeler); New Lenox (M. Talbot)
Michigan: Baraga County (no collector)

As has been noted above I have synonymized the subspecies *arizonensis* with the typical *pallipes*. I am of the opinion that Wheeler was misled by an incorrectly labelled specimen, to look for differences which actually do not exist. I have made a very careful study of the single type on which the subspecies *arizonensis* was based. Wheeler noted six differences which distinguished *arizonensis* from the typical *pallipes*. It was (1) smaller (length 4 mm.), (2) the sides of the head were more nearly parallel, (3) the lateral teeth at the insertion of the mandibles were smaller, (4) the sculpture was finer and more opaque, (5) the pubescence was shorter and lacking on the upper surface of the head, (6) the color was ferruginous. As far as size is concerned the type of *arizonensis* is scarcely smaller than many of the small workers which appear in the nests of the typical form. Moreover, such small individuals have narrower heads with more nearly parallel sides and feebly developed teeth above the insertion of the mandibles. The first three criteria are, therefore, of little significance. The fourth and fifth differences concerning sculpture and pilosity are negated by structure of the type. The punctuation is no finer than that of the typical *pallipes* and the dorsum of the thorax is not opaque but shining. There is abundant pubescence on the upper surface of the head of *arizonensis*. Finally a color distinction based upon a single specimen is of questionable value at best and, moreover, the immature specimens of the typical form have the ferruginous color noted for *arizonensis*. As far as the writer has been able to determine the only thing which distinguishes *arizonensis* from the typical *pallipes* is the locality in which it was supposedly found. That our common eastern form should appear in the Huachuca Mountains of Arizona is a matter worthy of careful consideration. According to the locality label the type of *arizonensis* was secured by Dr. W. M. Mann in Ramsey Canyon at an elevation of 5800 feet. At the 5800 foot level the zonal character of Ramsey Canyon is a rather peculiar one, representing, as far as the writer was able to determine, a transition zone modified by the presence of a considerable number of southern forms. In view of the fact that at higher levels Ramsey Canyon supports a magnificent stand of timber and in this heavily wooded area there occur genera of ants commonly associated with *Stigmatomma*, the writer was at first inclined to believe that the single specimen of *arizonensis* had in some way managed to reach a level considerably below its normal nesting site. I am now convinced that a much simpler explanation is the correct one. The whole matter becomes clear if we assume that the type of *arizonensis* is actually a specimen of the typical *pallipes* which, through mislabelling, became included with the material taken by Dr. Mann in the Huachuca Mountains. In this connection I wrote Dr. Mann who informs me that he has no recollection of having taken the type of *arizonensis* when he collected in Ramsey Canyon. This

of course, is not conclusive proof and the fact that almost twenty-five years have elapsed since *arizonensis* was described adds to the chance for error. Yet I am sure that all good field workers will agree when I say that a "find" of such an unusual nature would produce a lasting impression. It is highly unlikely that if such an exemplary field worker as Dr. Mann had discovered a *Stigmatomma* in the Huachucas he would have failed to recall the circumstances. Whether the above explanation be correct or not the writer maintains that *arizonensis* is not a valid form. We shall have to regard it as a synonym of *pallipes* even if this necessitates extending the range of the typical form to the Huachuca Mountains.

My reasons for synonymizing the form described by Santschi as the variety *wheeleri* are drawn in large part from certain zoögeographical considerations of which Dr. Santschi was not aware when he set up this form. The type material of *wheeleri* came from Colebrook, Conn., and was, apparently, collected by Wheeler, although the specimens were sent to Santschi by Bequaert. In comparing these specimens with others which Wheeler had sent him from Massachusetts, Santschi was able to draw up an imposing list of differences. He, therefore, gave the Connecticut material varietal status despite the fact that twelve years before Wheeler had commented on the variability of the typical *pallipes* in the Connecticut area. As anyone who has collected this insect is aware specimens which come from the northeastern portion of the range are notoriously variable as to size. The smaller individuals occurring in this region have all the characteristics of Santschi's variety *wheeleri*, a part of the type series of which is in the collection of the M.C.Z. Yet the smaller forms occur in the same areas, or for that matter in the same nests, as the larger ones. I seriously doubt that anyone whose studies had been limited to the area within one hundred miles of New York would be able to analyze the situation successfully because of the seemingly inextricable manner in which the forms are intermingled. If we go further south, however, the matter becomes much more understandable. As far as the writer has been able to determine specimens coming from the southern coastal strip all show the characters of the larger, typical *pallipes*. As one goes inland toward the Piedmont there is an infiltration of the smaller specimens while in the valleys at the foot of the mountains there is a preponderance of the form that Santschi has called *wheeleri*. At elevations of three thousand feet or more (at least in North Carolina) these small specimens are replaced by the variant described in this paper as *montigena*. The characteristics of *montigena* show in a more extreme degree those of *wheeleri*. The funicular joints are very short, the clypeus is strongly projecting in the middle and the node of the petiole is markedly narrow. It may seem ill advised to defend the status of *montigena* and at the same time sink *wheeleri* since the latter form is obviously intermediate between *montigena* and the typical *pallipes*. This is precisely the reason why I believe that *wheeleri* should not have been named. It is clearly a form produced by the intergradation of the mountain-dwelling subspecies *montigena* and the lowland *pallipes*. Unlike the other two variants it has, as far as the writer has been able to determine, no range where it is the only form present. I am ready to admit that the structural characters of *wheeleri* permit a separation of the intergrade from the other two subspecies but this distinction has a decidedly limited application. If generally used it involves the splitting of nest series, particularly in the case of specimens coming from the northeastern states. This feature is perhaps less objectionable than the matter of the rank of *wheeleri*. It cannot properly be considered as a subspecies and if it is to be named at all we shall have to employ another rank for its designation. The writer is completely opposed to the use of more than one infraspecific rank and for this reason, if for no other, I propose to drop the name *wheeleri*.

Stigmatomma pallipes montigena, new subspecies

WORKER.—4.5–5 mm.

Differing from the worker of the typical *pallipes* as follows:

Head much narrower, the sides somewhat more evenly converging toward the occiput, the occipital border slightly concave. All the funicular joints except the first and last are notably broader than long, joints 2–5 almost twice as broad as long. The mandibles always appear to have five double teeth, the outermost pair never being imperfectly divided or single as is frequently the case with the typical *pallipes*. In addition there is frequently a small tubercle between the large, basal tooth and the first double tooth. Thorax more slender than in the typical *pallipes*, the sides of the epinotum seen from above broadest at the middle. Basal face of the epinotum slightly concave, more shining and much more lightly marked with transverse striae than in the typical *pallipes*. Node of the petiole seen from above much narrower. Clypeus with 9–11 teeth, of which seven form a rather strongly projecting central lobe which is flanked at either side by a more or less divided lateral tooth. Ventral lobe of the petiole somewhat larger than in the typical *pallipes*. Entire insect slightly more shining due to the smaller and shallower punctures. Body hairs finer, more even in length and more golden in color, particularly on the gastric segments. Color usually lighter than that of the typical *pallipes* but there is considerable variation in the degree of infuscation.

The female of *montigena* shows most of the differential characteristics which mark the worker. There is, however, less difference in the proportions of the thorax. One point may be added in connection with a statement made by Santschi concerning the female of *wheeleri*. According to Santschi the eyes of the female of *wheeleri* are much smaller than those of the typical *pallipes*. As the worker of *montigena* appears to show, to a more extreme degree, most of the differences which were used to separate *wheeleri* from the typical *pallipes*, one might expect that the female of *montigena* should have very small eyes indeed. Actually the eyes of the *montigena* female appear to be no smaller than those of the typical form. I take it that Santschi was misled by the fact that the total number of facets in the eyes of the female often varies so that by selecting suitable specimens it would be possible to set up what appear to be striking differences in eye size between individuals coming from the same nest series.

Holotype (female), ergatotype and a series of paratypes of *montigena* deposited in the collection of The American Museum of Natural History. Additional paratype material in the collection of the Museum of Comparative Zoölogy and the collection of the author. This subspecies is based upon a series of specimens taken by the author at Little Switzerland (elevation 3400 ft.) near Spruce Pines, North Carolina. Other specimens were secured at Blue Ridge (elevation about 3000 ft.) about five miles east of Black Mountain, North Carolina. I have also seen workers taken by Dr. P. J. Darlington on Mt. Mitchell and by Mr. Nathan Banks on Greybeard Mountain in the same state.

Stigmatomma pallipes oregonensis Wheeler

1915, Bull. Amer. Mus. Nat. Hist., XXXIV, p. 389, ♀ ♀.

The size of the worker of *oregonensis* appears to be fairly constant with the majority of the individuals measuring 5.5–6 mm. in length. The tendency to produce small individuals is less marked than in the typical *pallipes*, although it is not impossible to find workers which are scarcely 5 mm. long. I find several of the distinctions given in the original description of this subspecies somewhat confusing. If one selects individuals of comparable size for comparison it is difficult to see that the eyes of *oregonensis* are any larger than those of the typical *pallipes*, nor is it clear that the head of the first subspecies is shorter. The node of the petiole, seen from above, appears to be definitely bulkier in *oregonensis* but this difference is clearly shown only by the largest workers. On the other hand there is very little likelihood of confusing *oregonensis* with any of the other variants because of its unique mandibular structure. As noted in the key the inner margin of the mandible of *oregonensis* is almost straight. The mandible narrows, of course, at the base of the large, apical tooth, but the marked convexity of the inner margin, which is present in all the other subspecies, is lacking in *oregonensis*. The antennal scapes of *oregonensis* are

slightly longer than those of the other subspecies and the anterior edge of the clypeus is quite characteristic. The edge of the clypeus is virtually straight with the large flanking tubercles on the same level as the finer teeth which they enclose. The number of the fine, central teeth varies from six to nine. A similar condition is found in the clypeal margin of the subspecies *subterranea* but in the latter form the middle of the clypeus is usually slightly convex and bears fewer teeth. The color of the worker of *oregonensis* is very similar to that of the darker specimens of the eastern *pallipes*. In fully colored individuals the head and thorax are blackish brown with the gaster and legs a clear, yellowish brown.

The size of the female of *oregonensis* is rather variable. Most of the specimens are the same size as the larger workers but, in the same nest series, the length of the female may vary from 5.5–7 mm. The cephalic characters which distinguish the worker of *oregonensis* are found also in the female. The male of *oregonensis* is unknown.

The material belonging to the above subspecies which the author has been able to examine comes from the following localities:

Oregon: Marion County (P. J. Schmitt), type locality for the worker; Duncan, Blodgett (P. J. Darlington); Benton-Lane Park, Corvallis (H. A. Scullen); Forest Grove (M. C. Lane, A. C. Burrill)
Washington: Olympia (Kincaid), type locality for the female
British Columbia: Vancouver Island, Royal Oak (collector, J. T. D.)

Stigmatomma pallipes subterranea, new subspecies

The worker of this subspecies differs from that of the typical *pallipes* as follows:

The occipital border is more strongly impressed in the middle; the posterior half of the head has the sides sloping inward more sharply. The six small teeth which occur at the middle of the clypeal margin are smaller and more sharply set off from the flanking tubercles. The color is a clear yellowish brown without any trace of infuscation. The sculpture is everywhere lighter and the whole insect more shining. The pilosity is a little sparser, particularly on the head and thorax.

Described from fifteen workers taken by the author at Elmo, Kansas, on September 6, 1927.

Holotype (worker) and a series of paratypes deposited in the collection of The American Museum of Natural History. Additional paratypes in the collection of the Museum of Comparative Zoölogy and the collection of the author. Besides the type material I have seen three workers taken by W. P. Hayes at Winfield, Kansas, and a single specimen from Shoal Creek, Texas (Wheeler collector?), which appears to be an intergrade between *subterranea* and the typical *pallipes*.