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A REVISION OF THE ACROCERID FLIES OF THE GENUS
PIALEA ERICHSON WITH A DISCUSSION OF THEIR SEXUAL
DIMORPHISM (DIPTERA)

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While preparing a revision of the family Acroceridae (Cyrtidae) only five specimens of the genus *Pialea* were located for study, even though more than 6,000 specimens of the family had been borrowed from the various museums throughout the world. Because of the taxonomic confusion caused by the sexual dimorphic trait of this genus, and since specimens are apparently quite rare in collections and not often brought together for study, a revision of *Pialea* seems in order at this time.

I wish to acknowledge aid from the following people, who have contributed specimens and comments for this project: Prof. Max Beier of the Vienna Naturhistorische Museum, Austria; Prof. Willi Hennig of the Deutsches Entomologisches Institut, Berlin; Dr. S. L. Hora of the Zoological Survey of India in Calcutta, and Mr. Curtis W. Sabrosky, Entomology Research Branch, U. S. Department of Agriculture. Thanks are also due Dr. R. M. Bohart and Mr. Sabrosky for reviewing the manuscript. The drawings have been prepared by the author.

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The genus *Pialea* was described by Erichson (1840) for his new species *lomata* from Brazil. Westwood (1876) named a second species, *lutescens*, also from Brazil, but questioned its placement in *Pialea* because of the difference in the antennal insertion and slight differences in wing venation. Brunetti (1912) established the third species, *auripila*, from Burma, and (1926) a fourth species, *jardinei*, from Ceylon. Thus, four species have been described from four specimens of two different zoogeographical regions.

Hunter (1901) and Kertész (1909) listed *lutescens* as a synonym of *lomata* in their catalogs, and Brunetti (1912 p. 474) apparently followed them without question. How Hunter came to synonymize these species remains a mystery to me. Bezzi (1912, p. 78) attempted to show that these two species were distinct, basing his evidence on a male specimen from Brazil, which he determined as *lomata*.

I have been able to study the female type of *lomata*, the male type of *auripila*, and four other specimens representing the three new species herein described. An examination of the type of *auripila* revealed that it belongs to a new genus related to *Astomella* Lamarek. Judging from Brunetti's description of *jardinei*, I believe the species belongs to *Astomella*, rather than to the new genus to include *auripila*, which will be described in a later work. This transfer now leaves *Pialea* with only two known species, *lomata* and *lutescens*, both from Brazil.

SEXUAL DIMORPHISM

Sexual dimorphism of *Pialea* species is readily apparent only in the structure and insertion of the antennae, the longer wing length of the female, and in color patterns as in *ecuadorensis*, new species. Both color patterns and wing length are sexual differences occurring throughout the family, but I am unaware of this great antennal dimorphism in any other genus of Acroceridae and it may be considered unique for the family. The closely related genus, *Stenopialea* Speiser (1920, p. 205), may share this trait, but as yet only the male of its single species, *beckeri* Speiser, is known.

The sexual antennal dimorphism that has been studied in *Pialea* may be summarized as follows: Females have their antennae attached to the ventral surface of the antennal tubercle, and thus the antennae point downward throughout their length; the base of the first antennal segment is at or below the mideye height level; the antennal tubercle is typically smaller than in the males (fig. 3,*a-c*), and the first and third antennal segments are shorter and more conical or rounded than in the males. Males have their antennae attached to the anterior surface of the antennal tubercle and only the terminal segment points

downward, while the first two segments project straight forward; the antennal tubercle is large, nearly half as high as eye height, and is placed on the head so that its ventral surface is at or above the mideye height level (figs. 1, *b*, 3, *e*); the third antennal segment is longer and more laterally compressed than in the female, and the first segment is longer along its dorsal than its ventral surface.

Another character such as the longer abdomen of the male might also be noted and, if *ecuadorensis*, new species, is an indication, the color and maculation of the sexes may differ among the species of *Pialea*; however, this is more likely a specific rather than a generic character. One important and rather unique structure of the antennae, which is common to both sexes, is the whole or partial fusion of the first segment of each antenna into a common basal segment (figs. 3, *c, f, h, i*, 4, *f*). This latter feature is apparently shared by *Stenopialea beckeri* as deduced from the original description. Differences in antennal structure are frequently found between the sexes of species in the brachycerous Diptera, but I have been unable to find mention of any species exhibiting the significant difference of antennal insertion as described above.

SYSTEMATICS

The genus *Pialea* is in the subfamily Panopinae, and I believe it to be one of the more primitive genera of Acroceridae. It is more closely related to the still more primitive genus *Stenopialea* Speiser from South Africa than to its nearest South American relatives, *Pialeoidea* Westwood and *Ocnaea* Erichson. This would certainly suggest a definite relationship of the two faunas and a wider distribution of *Pialea* or *Stenopialea*, or both, sometime in the past.

It seems possible that *lutescens* Westwood and *antiqua*, new species, belong in a distinct genus, tending to fill the gap between *Pialea* and *Stenopialea*. However, for lack of sufficient material, these two species have been included in *Pialea*. Thus, the genus is redescribed below in its widest sense, and, should it be necessary to narrow its limits in the future, only three of the five known species—*capitella*, new species; *ecuadorensis*, new species; and *lomata* Erichson—would be included in typical *Pialea*.

Genus *Pialea* Erichson

Pialea Erichson, 1840, pp. 160–161, pl. 1, figs. 9, (9)p.

GENOTYPE: *Pialea lomata* Erichson (type by monotypy).

HEAD: Extremely small compared to thorax; eyes pilose, in lateral view covering anterior one-third to one-half of head capsule, well separated above and below antennae except in *P. capitella* (fig. 1, *c*); frontal region either with tubercle or somewhat raised; ocellar tubercle

raised, two lateral ocelli; antennae 3-segmented, segment I of each antenna fused basally or completely fused (fig. 3, *c, h*), short, attached to ventral surface (female) or anterior surface (male) of antennal tubercle, inserted well above (male), at, or below mideye height (female), segment II shorter than I, segment III long, with or without apical seta, round, or compressed, with concavity along outer margin, pointed or rounded apically; no visible palpi; proboscis minute, when visible not much longer than rounded, rigid proboscis tubercle in front; occiput narrow or wide; pile dense on occiput, eyes, dense or sparse on antennae; frontal region above and below antennae, occiput, proboscis plate, and lower part of sternopleura and meropleura grayish pollinose.

THORAX: Convex, strongly arched in front, leveled out behind, covered with dense pile except on lower sternopleura and meropleura, near base of halter, and on upper anterior side of postalar callosity; humeri separated by less than head width; squama large, narrow or wide; legs well built, tibiae with one (outer) or two (inner and outer) apical spurs, metatarsus extended (fig. 4, *e*) or compressed (fig. 4, *g*), three pulvilli, middle one narrowest; wing reaches beyond (female), at, or near tip of abdomen (male), rounded or angled at apex; venation strong; subcosta ends beyond middle of wing, no humeral crossvein, R_{2+3} incomplete or reaching wing margin, vein R_4 ends at or before wing apex, no radial, cubital, or marginal veins reach wing margin behind R_4 (except possibly in *lutescens*), and anal axillary vein short, usually not penetrating posterior lobe, four to six posterior cells, only the first and subdiscal ones closed, basal cells nearly even or second basal up to one-third longer, anal cell narrow or widened at apex.

ABDOMEN: Compressed dorsoventrally, widest at segment III or IV; six tergites and seven sternites easily visible; genitalia concealed under tergite VII, directed posteriorly, not ventrally; stigmata of at least segments II–IV free, lying in intersegmental membrane, each enclosed by small chitinous ring.

REMARKS: The first posterior cell is divided near the apex of the discal cell, and in this discussion I have interpreted the upper part as the first posterior cell and the lower part as the second posterior cell.

Key to the species of *Pialea* Erichson

1. Antennae inserted on large tubercle both above mideye height level; wings not extending much beyond tip of abdomen [males]. 2
 Antennae inserted on small (or large) tubercle, the antennae inserted at or below mideye height level; wings extending beyond tip of abdomen [females]. 4
2. Wing with vein R_{2+3} incomplete 3
 Wing with vein R_{2+3} complete (Brazil) ***P. lomata*** Erichson

3. Wing with first and second basal cells of nearly equal length; eyes covering more than one-half of head capsule (Brazil) . . . *P. capitella*, new species
Wing with second basal cell about one-third longer than first; eyes covering only one-third of head capsule (Ecuador) . . . *P. ecuadorensis*, new species
4. Wing with anal cell widened at apex, six posterior cells; antennae inserted on large tubercle 5
Wing with anal cell nearly of equal width throughout, four posterior cells; antennae inserted on slightly raised tubercle 6
5. Mesonotum yellow with two longitudinal stripes; fifth posterior cell about one-fifth as wide as long at its widest point (Brazil).
P. lutescens Westwood
Mesonotum entirely dark brown, without stripes; fifth posterior cell about one-half as wide as long at its widest point (Brazil).
P. antiqua, new species
6. Wing with vein R_{2+3} incomplete, not reaching wing margin; thorax and abdomen orange with black maculations (Ecuador).
P. ecuadorensis, new species
Wing with vein R_{2+3} complete, reaching wing margin; thorax all black, abdomen dark brown, yellow only on parts of tergites IV–VI (Brazil).
P. lomata Erichson

Pialea antiqua, new species

FIGURES 2,b; 3,gh; 4,c,e

FEMALE: Length of entire specimen 9.70 mm.; wing length 8.75 mm.

COLOR: Brown and black; head except antennal tubercle, ocelli, proboscis and distal one-fifth of antennal segment III black; remainder of specimen dark brown except tip of antennal segment III, narrow apical margins of tergites I–IV, large apical margin on V and all of VI, which are light brown; halter yellow, wing membrane light brown infuscated, wing veins and squama brownish yellow, pulvilli white.

PILE: Yellowish brown, about same density over entire specimen, little thinner on antennae, that on antennal segments, antennal tubercle, tibiae, and tarsi about as long as antennal segment II, that on all other parts about as long as antennal tubercle; dorsal and ventral surfaces of squama with minute pile, squamal margin with normal length pile, but golden.

HEAD: With well developed antennal tubercle (fig. 3,g); eyes in lateral view covering over one-half of head capsule; segment I of each antenna fused only on basal one-third (fig. 3,h), about twice as long as segment II; segment III long, tapering to point terminating in apical seta, pile on upper outer surface only; ocellar tubercle not well raised; proboscis visible, short, slightly exceeding proboscis tubercle in length (fig. 3,g).

THORAX: Not as strongly arched as in *lomata*; scutellum wider than long; squama narrow, paper thin, evenly arched in middle, rounded behind; femur of each leg longer than corresponding tibia, tarsi with metatarsi not compressed (fig. 4,e), tibial spur on each leg about as

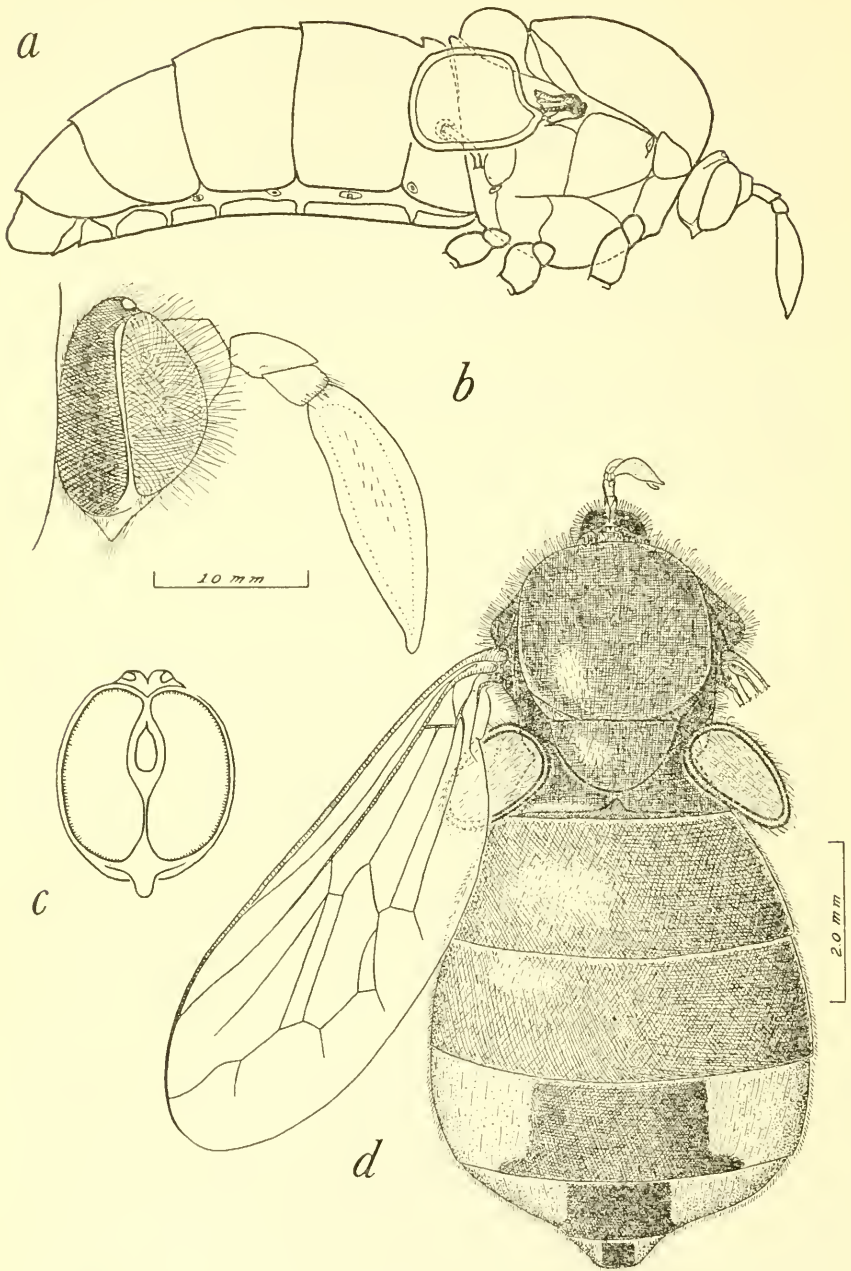


FIGURE 1.—*Pialea capitella*, new species: *a*, lateral view of body; *b*, lateral view of head; *c*, anterior view of head; *d*, dorsal view of body.

long as tarsal segment IV; wing with six posterior cells, anal vein widened apically, m crossvein $2\frac{1}{2}$ times r-m crossvein.

ABDOMEN: Long, narrow, somewhat sunken from loss of eggs; stigmata of segments II-VI free in intersegmental membrane.

HOLOTYPE: Female: Alto Itatiaia, Rio de Janeiro, Brazil, altitude 2,000 meters, March 1941 (R. C. Shannon), USNM 62979.

REMARKS: There is some question in my mind as to whether this species belongs in *Pialea*. It is closely related to *lutescens*, judging from the latter's description, and shares with it such characters as strong wing venation with a widened anal cell and six posterior cells, the large antennal tubercle, and the same type of antennae, including the weakly fused first segment as figured by Wandolleck (1914, pl. 1, fig. 16) for *lutescens*. It would be interesting to know if *lutescens* has the same tarsal structure as *antiqua*, or whether it is more like *lomata*. As stated previously, these two species may form a distinct genus, but, in the absence of more material and definite males of both species, it seems better to place *lutescens* and *antiqua* in *Pialea* at present.

Pialea lutescens Westwood

FIGURE 2,c

Pialea lutescens Westwood, 1876, pp. 513-514, pl. 6, fig. 2 and details.—Bezzi, 1912, p. 78.—Brunetti, 1912, p. 474; 1920, pp. 160-163.

I have not examined any specimens of this species, and apparently the only known specimen is the type, which I deduce from Westwood's drawings to be a female.

The characteristic features of *lutescens* as gleaned from the original Latin description and the figures presented by Wandolleck (1914) are as follows: Entire body clay-yellow, somewhat pubescent; dorsum of thorax more yellowish, with two lateral black vittae; antenna deflexed, last segment somewhat compressed, all segments with some pile; wings with six nearly complete posterior cells, only first and fifth complete, anal cell widened apically.

Wandolleck's (1914, pl. 1, figs. 16, 17; pl. 3, fig. 2) figures of *lutescens* seem to be more accurate than Westwood's, as the latter showed slight variation in the wing venation in his two figures of the same specimen. It may be assumed that Wandolleck's drawings were made from the type, as he had access to the Hope Museum Collection, where the type is now located.

This species is related to *antiqua* as discussed under the latter species. Both of these species appear to be as close to *Stenopialea beckeri* Speiser from Capeland, South Africa, as to any known *Pialea* species. The only locality data known for *lutescens* is "Brazil."

Pialea lomata Erichson

FIGURES 2,a; 3,b; 4,d,f

Pialea lomata Erichson, 1840, p. 161, pl. 1, fig. 9, (9)p—Westwood, 1876, p. 513.—Brunetti, 1912, p. 274.—Bezzi, 1912, p. 78.

REDESCRIPTION (based on type specimen): FEMALE: Length of entire specimen 9.50 mm. wing length 8.80 mm.

COLOR: Black, brown, and yellow; head except eyes and antennae, thorax except upper sternopleura, midpteropleura, and coxae dull black; eyes and ocellar tubercle shiny black; antennae, ocelli, halteres, upper sternopteropleura, midpteropleura, tergites I–III, IV except lateral margins and small median spot on V–VI, sternites I–IV except narrow apical margins and V–VI in broad median area, basal two-thirds of femora and tibiae, tarsal segments I and V, and distal two-thirds of tarsal claws dull or partly shiny brown; tergite IV except broad median area, V–VII except narrow median spot, narrow apical margins of sternites I–IV, lateral and apical margins V–VII, apical one-third of femora and tibiae, knees, tarsal segments II–IV, pulvilli, and basal third tarsal claws dull yellow; wing hyaline, lightly yellow infuscated, veins yellowish brown; squama yellow, shiny, hyaline with brownish yellow margin.

PILE: Yellowish white; on eyes, antenna, occiput, femora, tibiae, squama, and tergites except lateral margins about as long as antennal segments I and II combined, on thorax, coxae, sternites, lateral abdominal margins about as long as hind tarsal claw; dense on thorax, and apical sternal margins of abdomen, otherwise sparse on abdomen except dorsal lateral margins.

HEAD: With ocellar tubercle raised; frontal region raised with small antennal tubercle; proboscis concealed behind cone-shaped tubercle; antennae about as long as head height, segment I of each antenna fused except for slight distal fracture, about as long as hind tarsal segment II, antennal segment II short, about half as long as antennal segment I, segment III about as long as eye height, rounded apically, somewhat compressed laterally; eyes nearly evenly separated above and below antennae, a little less below.

THORAX: With scutellum hardly wider than long, about one-half width of mesonotum; squama nearly tear-drop shape, transparent, rather flat; femur of each leg about as long as corresponding tibia, each tibial spur about as long as corresponding tarsal segment II, tarsi about as in figure 4,g but basitarsus not quite as expanded distally; wing with five posterior cells, anal cell nearly as long as second basal cell, narrow and straight, arculus crossvein present only between M and Cu₁, m crossvein about 2½ times as long as r-m crossvein.

ABDOMEN: Widest at segment III, shaped about as in figure 1,d, somewhat sunken from loss of eggs, except segments V–VI, rigid due

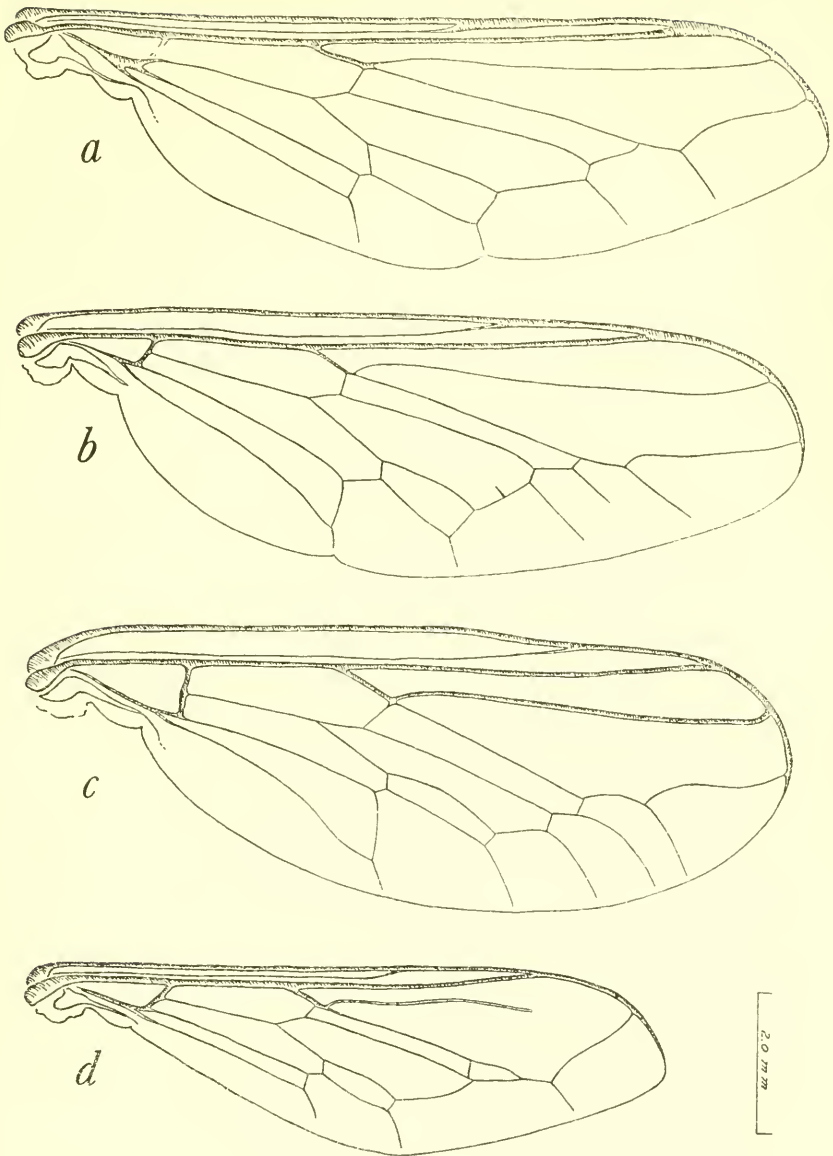


FIGURE 2.—Wings of four species of *Pialea*: *a*, *P. lomata* Erichson; *b*, *P. antiqua*, new species; *c*, *P. lutescens* Westwood (reconstructed from Wandolleck, 1914, pl. 3, fig. 2), *d*, *P. ecuadorensis*, new species, male paratype.

to structure of genitalia; genitalia missing; stigmata free in intersegmental membrane of segments II-IV.

REMARKS: The type female specimen bears the following labels: A white one with "*Pialea* Er.," a blue-green one with "*lomata* Er.," a blue-green one with "San João del Rey, Sellow," an orange one with "Type," and a small white one with the number "1247." The type is in the Deutsches Entomologisches Institut, Berlin, Germany, and is in very good condition except for missing right front leg, tarsi of leg II and III, apical portion of left wing, and genitalia.

The type locality "San João del Rey" has been located on different maps, and was also found to be spelled as "San João d'El-Rey" and "São João del Rei." It is a locality about 250 km. northwest of Rio de Janeiro in the State of Minas Gerais, Brazil. Two of the three other Brazilian *Pialea* species have been collected in the same vicinity, i.e., near Rio de Janeiro and near São Paulo, thus representing an isolated Brazilian distribution at present, as the other species, *lutescens*, is recorded only from "Brazil." The new species *ecuadorensis*, from Ecuador, hints at a much larger distribution.

Erichson (1840) gave an excellent color figure of the whole specimen of *lomata*, but his figure of the head (fig. (9)p) gave an erroneous impression of the antennal insertion by implying a ventral insertion. Bezzi (1912) examined a specimen of *Pialea* from São Paulo and, although he gave no figures, he said the antennae were bare, implanted on a special tubercle which was placed nearer the vertex than the mouth. This indicates he had a male and very probably it was *lomata*.

This species may be more closely related to *ecuadorensis* than to *capitella*, judging from the similarity of the basal cells and general cell structure, particularly in the shape of the first posterior cell. However, it has five posterior cells as in *capitella*.

***Pialea capitella*, new species**

FIGURES 1,*a-d*; 3,*i*; 4,*a*

MALE: Length of entire specimen 11.25 mm.; wing length 8.40 mm.

COLOR: Black, brown, and yellow. Head, except antennal segments II and III, black; antennal segments II, III except upper inner basal third, thorax except sternopleura and meropleura, legs except knees, pulvilli and basal third of tarsal claw, squama, wing veins, sternites I-VII except along narrow apical margins, tergites I-III, and tergites IV-VI in broad median quadrangular area (fig. 1,*d*) dark brown; upper inner basal third of antennal segment III, pulvilli, basal third of tarsal claws, lateral margins of tergites IV-VI, and wing membrane brownish yellow.

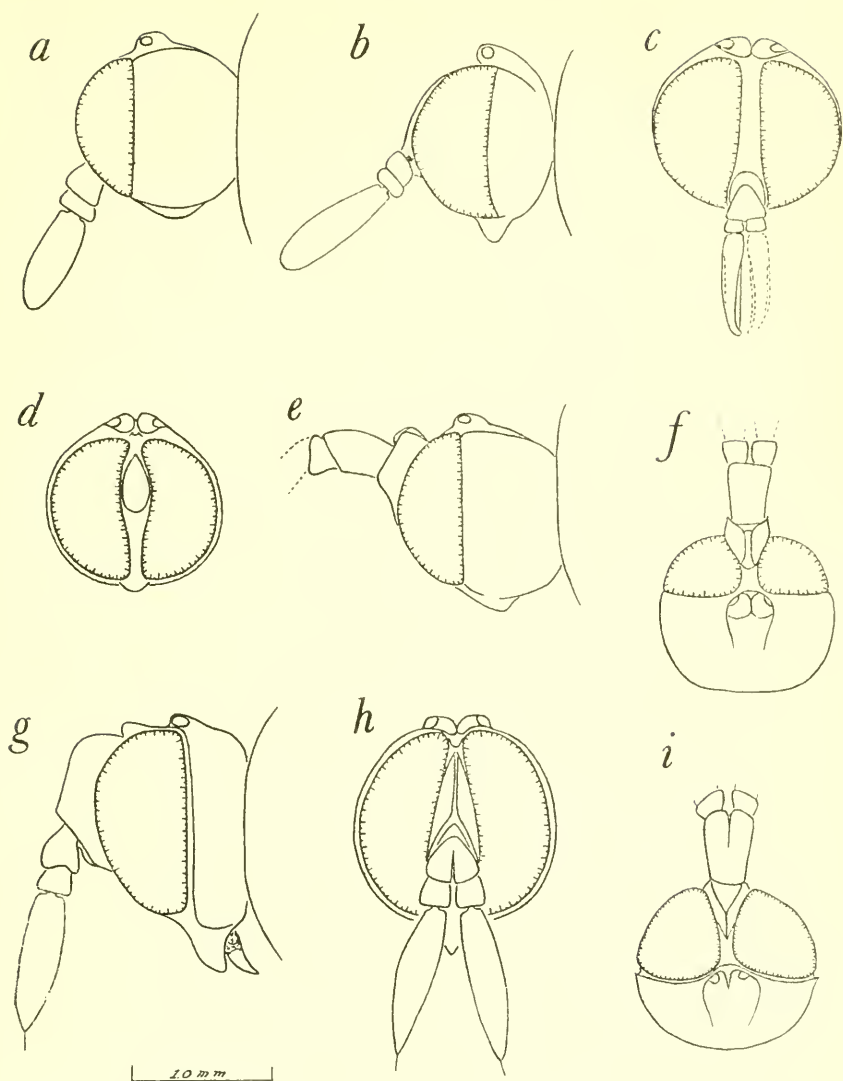


FIGURE 3.—Heads of four species of *Pialea*. *P. ecuadorensis*, new species: *a*, female, lateral view; *c*, same, anterior view; *d*, male, anterior view; *e*, same, lateral view; *f*, same, dorsal view. *P. lomata* Erichson: *b*, lateral view. *P. antiqua*, new species: *g*, lateral view; *h*, anterior view. *P. capitella*, new species: *i*, dorsal view.

PILE: Yellowish brown; on eyes, occiput, mesonotum, mesopleura, scutellum, and tergite I about as long as antennal segment I, that on abdomen much shorter, concolorous with ground color, about one-half as long as rest of pile; yellowish white on legs, propleura, upper sternopleura, mesopleura, and squama.

HEAD: With ocellar tubercle elevated; antennal tubercle large (fig. 1*b*); proboscis concealed behind cone-shaped tubercle; antennae much longer than head height, segment I of each antenna fused on basal half, shining, apilose, produced above over segment II, about as long as eye width, segment II about half as long as I, covered with short, sparse hairs, segment III longer than head height, concave in outer median area, concave region with few scattered hairs.

THORAX: Well arched in front; scutellum little wider than long; squama greatly expanded behind near thorax, opaque, curved sharply along distal inner margin; femora progressively longer from first to third, each longer and in same proportion to tibiae I-III; each tibia with two (inner and outer) subequal spurs, each spur nearly as long as corresponding tarsal segment II; metatarsus about as in figure 4*g*, but a little longer, length of segments II-IV equals distitarsus, basitarsus not as expanded distally; wing with five posterior cells, fourth not bounded basally by second basal cell, vein R_{2+3} incomplete, not reaching wing margin, vein R_4 swinging upward near apex causing narrowed submarginal region, anal cell narrow, about as long as second basal cell, basal cells nearly equal length, m crossvein about three times r-m crossvein.

ABDOMEN: Rather compressed dorsoventrally, flattened beneath, slightly convex above, tergite I cleft medially, well raised along posterior margin; stigmata free in intersegmental membrane of segments II-IV; genitalia not examined, broken off inside specimen.

HOLOTYPE: Male; Cantarera, near São Paulo, Brazil (Wettstein Brazil Expedition, 1891). The type will be deposited in the Vienna Naturhistorische Museum, Austria.

REMARKS: The characteristic incomplete vein R_{2+3} of *capitella* shows a relationship to *ecuadorensis*, but whether this is a factor of relative or convergent evolution is not determined. Such other characteristics as two tibial spurs and the larger eyes causing a different shaped head capsule are distinctions which suggest a more distant relationship. This species is probably closer to *lomata*, as discussed under the latter. Also, the character of the two equal-length basal cells in *capitella* is unique for the genus, and it therefore seems that this species has no known close relative.

The name *capitella* refers to the minute head, which is also a character of *Pialea*.

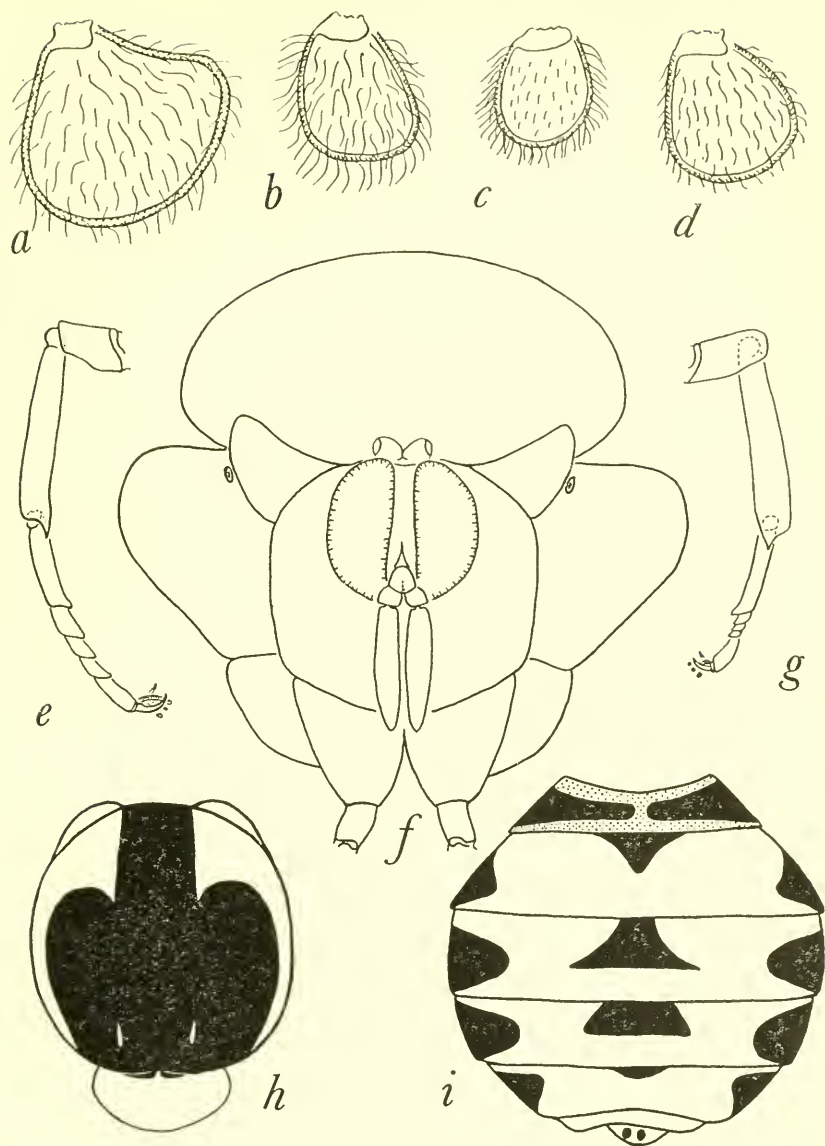


FIGURE 4.—*a-d*, Left squama, viewed from above in flat plane, of: *a*, *Pialea capitella*, new species; *b*, *P. ecuadorensis*, new species, female; *c*, *P. antiqua*, new species; *d*, *P. lomata* Erichson. *e*, *P. antiqua*, new species, hind tibia and tarsus viewed from outer side; *f*, *P. lomata* Erichson, head and thorax, anterior view; *g-i*, *P. ecuadorensis*, new species, female: *g*, hind tibia and tarsus viewed from outer side; *h*, mesonotum and scutellum, dorsal view; *i*, abdomen, dorsal view.

Pialca ecuadorensis, new speciesFIGURES 2,*d*; 3,*a,c,f*; 4,*b,g-i*

FEMALE: Length of entire specimen 7.25 mm.: wing length 7.25 mm.

COLOR: Orange, black, and brown; head except antennal segments II-III, pleurae except small spot on upper mesopleura, mesonotum except anterior angle and lateral margin (fig. 4,*h*), and halter except extreme base dull black; antennal segments II-III, coxae, basal two-thirds femur II, tibia II, femur, tibia, and basitarsus leg III, sternites I-V, tergite I, lateral margins and median triangular areas of tergites II-V (fig. 4,*i*), cerci, and stronger wing veins dark brown; anterior angle and lateral margin of mesonotum, proepisternum, small spot on upper mesopleura, spot at upper junction of sternopleura and meropleura, postalar callosity, scutellum, and remainder of abdomen orange; wing membrane faintly browned, squama light brown with yellowish brown margin, pulvilli light brown.

PILE: Golden yellow. Dense on eyes, occiput, thorax, squama, abdomen, and legs except tarsi; that on head about as long as antennal segments I-II combined, that on thorax about as long as antennal segment III, that on abdomen sparse, longer than on thorax, intermixed with dark brown hairs, particularly along posterior margins of tergites I-IV, that on sternites without brown hairs, that on tarsi quite short, appressed; hind tibia with dark brown and black pile, that on antennal segments II-III short, lightly brownish yellow, pilose.

HEAD: With ocellar tubercle a point; frontal region only slightly raised, antennal tubercle minute; proboscis hardly visible underneath small proboscis tubercle; antenna little shorter than head height, segment I of each antenna completely fused, about as long as hind tarsal segments III-IV, segment II about half as long as I, round, segment III about three-fourths eye height, rounded apically, compressed laterally; eyes occupy anterior third of head capsule, separated a little more below than above antennae.

THORAX: Maculated (fig. 4,*h*); scutellum much wider than long; squama nearly straight behind, narrow, nearly opaque, almost flat; femur and tibia of each leg nearly equal in length, tibial spur about as long as corresponding tarsal segment II, metatarsus compressed (fig. 4,*g*); wing as in figure 2,*d* except no crossvein present in first posterior cell, and third posterior cell (subdiscal) divided near apex (right wing only); four posterior cells, anal vein narrow, vein R_{2+3} incomplete, not reaching wing margin, faint, inserted slightly posterior to r-m crossvein, m crossvein about five times r-m crossvein.

ABDOMEN: Short, a little longer than thorax, widest at segment III, maculated (fig. 4,*i*), somewhat sunken from loss of eggs, except segments V-VI, rigid due to structure of genitalia.

MALE: Length of entire specimen 8.75 mm.; wing length 6.60 mm. As described for female except as follows:

COLOR: Black and brown; head except antennal segment II, pleurites except spots between sternopleura, meropleura, and mesopleura, mesonotum except faintly lightened anterior lateral angle, halter, scutellum, and tergites II-V dull black; antennal segment II, spots around sternopleura, anterior lateral angle of mesonotum, tergites I and VI, sternites I-VII, legs, and strong wing veins dark brown; no orange coloration.

PILE: Same as in female except that on head about as long as male antennal segment II, that on thorax about as long as male antennal segments I-II combined; pile on abdomen distinctly different, being bicolored, yellowish white and brown; on tergite I-II brown except yellowish white near midline, tergite III all brown, tergite IV brown except yellowish white at lateral margins; tergite V has a little brown along base, otherwise yellowish white; tergite VI all yellowish white; all abdominal pile about as long as thoracic pile except that on middle and margins of tergite II, long, nearly as long as front basitarsus.

HEAD: With large antennal tubercle placed above mideye height; antennal segment I twice as long, but completely fused, as in female, segment II twice as long in ventral as in dorsal view, much as in *capitella* (fig. 1, *b*), segment III missing.

THORAX: Not maculated, mesonotum slightly lighter colored along anterior and lateral angle; wing as in figure 3, *a* except in left wing no crossvein in first posterior cell.

ABDOMEN: Longer than thorax, rigid, stigmata as in figure 1, *a*; genitalia missing.

HOLOTYPE: Female; Calacali, Ecuador, altitude 2,800 meters, 1937 (F. Campos R.), USNM 62980.

PARATYPE: Male: Same data as holotype, also in USNM.

REMARKS: The type specimens of this species were collected in the same place in Ecuador by the same man, and presumably on the same date. It has therefore been assumed that the two specimens represent the two sexes of the same species, and it is largely on this evidence that the generic concept taken by the author has been set forth. Since this is the only species of *Pialea* with both sexes adequately described (see discussion under *lomata*), the sexual difference in color complicates the matter even further. However, on the basis of wing venation and other shared characters, there seems little doubt that the association made in *ecuadorensis* is correct and not a combination of the sexes representing two species or even two genera.

This species extends the distribution of *Pialea* several thousand miles from Brazil and yet, of all the species known to me, it is prob-

ably closer to *lomata* than any other. It is, however, easily distinguished from *lomata* in its wing venation. Due to the rather poor chances of these acrocerids crossing the high Andean range in Perú, Ecuador, and Colombia, it may be that further species will be obtained in Venezuela and Colombia, and that the extent of the presumably tropical genus has or had a circum-Andean distribution in the north. As to the validity of the locality data for *ecua.lorensis* I have no doubt, as Señor Campos has collected for many years in Ecuador. Cole's endemic Ecuadorian genus, *Camposella*, was named for this collector.

It should be pointed out that the wing venation as shown in figure 3, *a* is atypical in one sense—the crossvein in the first posterior cell is adventitious and does not occur in the left wing of the male or in either wing of the female holotype. The right wing of the male was drawn only because it was in better condition for study.

I have made the female the holotype of this species since it is as surely a *Pialea* as *lomata*. It is of course possible, though not at all probable, that the males described in this work represent another genus. The female specimen was in better condition, the male lacking the terminal segment of the antennae and four of the legs. Both specimens were slightly oily, but not badly rubbed. The female specimen lacked the left terminal antennal segment also.

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