

Notes on *Acar*i.XX<sup>th</sup> Series. (*Acaridae*.)

By Dr. A. C. Oudemans, Arnhem.

(With 29 figures.)

1. *Eustathia cultrifera* (Rob.). (Fig. 1—10.)1868. *Pterolichus cultrifer* Rob. in Compt. Rend. Paris, v. 66. p. 787.1877. *Pterolichus cultrifer* Rob. in Journ. Anat. Physiol., 1877, p. 392, 408. t. 22. f. 8, 10.1877. *Pterolichus securiger* Rob. in Journ. Anat. Physiol., 1877, t. 22. f. 8 (errore).1878. *Pterolichus cultrifer* Hall. in Zeit. wiss. Zool. v. 30. p. 514.1878. *Pterolichus cultriferus* Hall. in Zeit. wiss. Zool. v. 30. p. 533.1878. *Dermaleichus cypseli* Can. in Att. R. Ist. Ven. Sc. Lett. Art. ser. 5. v. 5. p. 53.1879. *Pterolichus securigerus* Can. in Att. Soc. Ven. Trent. Sc. Nat. v. 6. p. 8.1880. *Pterolichus cultrifer* Mégn. Paras. Malad. paras. p. 149.1885. *Pterolichus cultrifer* Trt. in Journ. Microgr. p. 57.1886. *Pterolichus cultrifer* Can.

Prosp. Acarof. Ital.

v. 2. p. 267. t. 20. f. 7.

1887. *Pterolichus cultrifer*

Groult, Ac. Crust.

Myr. p. 62.

1888. *Pterolichus cultrifer*

Berl. Ac. Myr. Scorp.

Ital. fasc. 50. no. 6.

1897. *Pterolichus cultrifer*

Berl. Ordo Crypt. Sarc.

p. 59.

1905. *Eustathia cultrifer*

Oudms. in Entom.

Bericht. v. 1. p. 218.

Robin, 1868, only mentions the name, without description or figure.

Robin, 1877, gives an ample description of all the stades of development. He has, however, overlooked the median vertical hair, the two short hairs flanking the

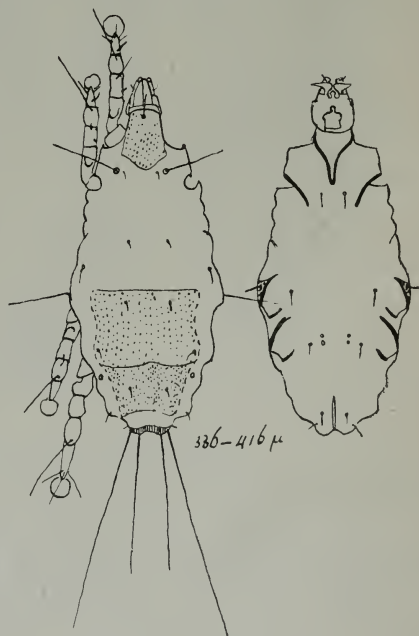


Fig. 1 u. 2.  
*Eustathia cultrifera* (Rob.) Nph. II.  
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anus. — Of the male he does not mention the enormous transparent margins of the genital suckers. Of the middle dorsal shield he says: „rétrécie en arrière où elle n'atteint pas le bout de l'abdomen“, but he does not mention that behind this „plaque thoraco-abdominale“ there is a third (posterior) dorsal shield. —

Of the female he says that the epimera I form a V, which is not quite true, for the epimera I in reality are free; between their proximal ends we observe, however, a point-shaped sternum. Of the legs IV he tells us that they extend beyond the abdomen „de la moitié environ de la longueur du tarse“. Apparently he has meant of the legs themselves (see our fig. 3). The anterior dorsal shield is described by him „comme sur le mâle“; the anterior dorsal shield of the male (fig. 8) is less wide than the distance between the legs of the second pair, so that it is flanked by a band of unprotected skin, whereas that of the female occupies the whole

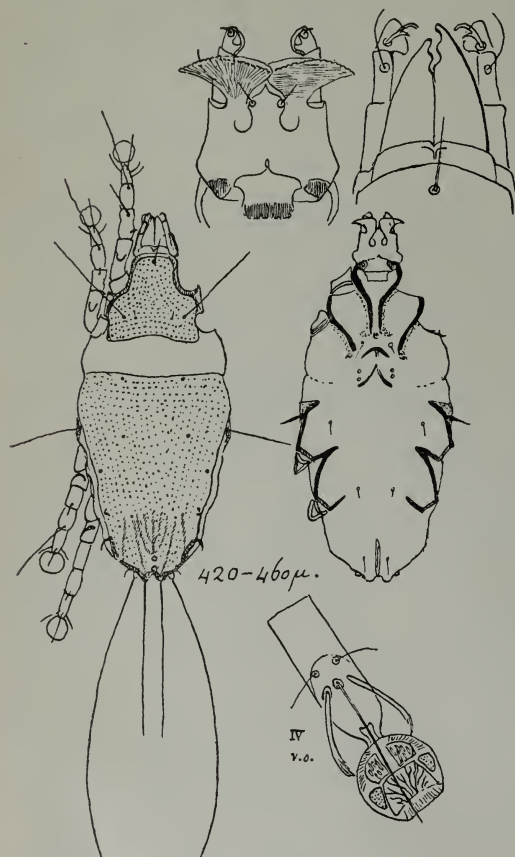


Fig. 3—7. *Eustathia cultrifera* (Rob.) ♀.

space between legs II; again, posteriorly the shield of the male is deeper excavate than in the female. The posterior dorsal shield of the female is called again „comme sur le mâle“, which is inexact too, for it is not divided in two shields, but covers the whole abdomen; moreover, quite posteriorly it is provided with a few longitudinal ridges, which in all the females examined by me have the same configuration (see my figure 3). — Of the

deutonympha called by him „femelle accouplée“ he has not observed the posterior dorsal shield, which, as our figure 1 shows, is divided in two shields, a large one and a minute one; the large one is more or less trapezoidal and divided in an anterior larger portion and a posterior smaller portion; the latter is better chitinized and therefore darker than the former; the minute one is separated from the larger one by a transverse wide band of unprotected skin, is dark, strongly chitinized and quite marginal (terminal).

Robin, 1877, only figures the abdominal lobes of the male, and the egg.

Haller, 1878, only mentions the sexual difference of the 4<sup>th</sup> pair of legs, which is relatively small.

Canestrini's description, 1878, is scarcely good enough to recognize the species, if he had not called it *cypseli*!

Canestrini in 1879 only mentions the name, which, taken after fig. 8 of Robin, is wrong, of course.

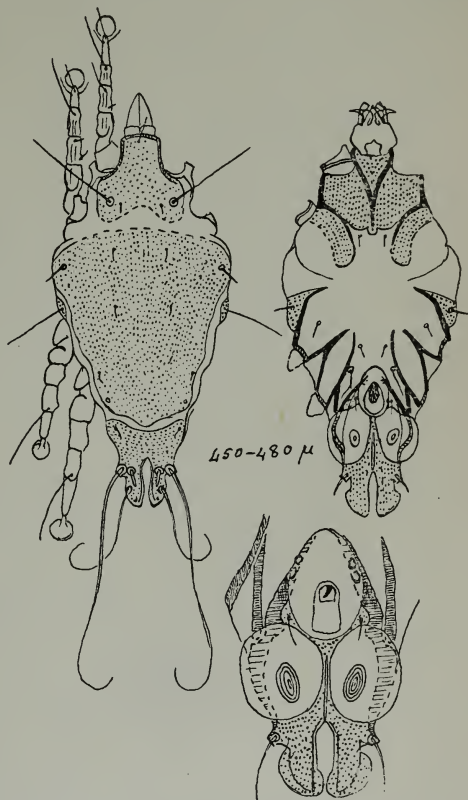
Mégnin, 1880, only mentions the name. Fig. 8—10. *Eustathia cultrifera* (Rob.) ♂.

Trouessart, 1885, only mentions the name.

Canestrini, 1886, gives a very short description of the male, the female, the deutonympha and the larva; his figure is good enough to recognize the male.

Groult, 1887, describes the creature too short to recognize it.

Berlese, 1888, describes and figures the adults short but good; only the posterior dorsal shield is entire, not divided in two pieces; apparently he has overlooked this arrangement. The epigynum is drawn too large.



Berlese, 1897, only mentions the name.

Oudemans, 1905, calls the species *Eustathia cultrifer*, and gives good grounds for doing so.

I think it not necessary to give ample descriptions of the deutonympha, female and male (other stades I did not examine), for the descriptions of Robin are exact enough, abandoned the little inaccuracies quoted hereabove.

I have only to explicate my figures.

- Fig. 1: deutonympha, dorsal side.  
 " 2: deutonympha, ventral side.  
 " 3: female, dorsal side.  
 " 4: female, ventral side.  
 " 5: rostrum of female. This, however is exactly the same in all the stades.  
 " 6: ventral side of hypostome and palpi. This is exactly the same in all the stades.  
 " 7: tarsus IV. This is the same in all the legs, except leg I which dorsally is provided with on olfactoric hair, and in all the stades.  
 " 8: male, dorsal side.  
 " 9: male, ventral side.  
 " 10: hind part of ventral side, showing the enormous transparent membranes surrounding and enlarging the anal suckers.

## 2. *Chauliacia securigera* (Rob.) (Fig. 11—16.)

1877. *Pterolichus securiger* Rob. in Journ. Anat. Physiol., 1877, p. 392, 406. t. 22. f. 9.  
 1877. *Pterolichus cultrifer* (errore) Rob. in Journ. Anat. Physiol., 1877, t. 22. f. 9.  
 1878. *Pterolichus securiger* Hall. in Zeit. wiss. Zool. v. 30. p. 514.  
 1878. *Pterolichus securigerus* Hall. in Zeit. wiss. Zool. v. 30. p. 533.  
 1878. *Dermaleichus paleatus* Can. in Att. R. Ist. Ven. Sc. Lett. Art. ser. 5. v. 5. p. 65.  
 1879. *Pterolichus cultriferus* Can. in Att. Soc. Ven. Trent. Sc. Nat. v. 6. p. 9.  
 1880. *Pterolichus securiger* Mégn. Paras. Malad. paras. p. 149.  
 1881. *Pterolichus securiger* Hall. in Zeit. wiss. Zool. v. 36. p. 373. t. 24. f. 1.  
 1885. *Pterolichus securiger* Trt. in Journ. Microgr. p. 58.  
 1886. *Pterolichus securiger* Can. Prosp. Acarof. Ital. v. 2. p. 266. t. 20. f. 8.  
 1887. *Pterolichus securiger* Groult, Ac. Crust. Myr. p. 62.

1892. *Pterolichus securiger* Berl. Ac. Myr. Scorp. Ital. fasc. 65. no. 4.

1897. *Pterolichus securiger* Berl. Ordo Crypt. Sarc. p. 59.

1905. *Chauliacia securigera* Oudms. in Entom. Bericht., v. 1. p. 218.

Robin, 1877, gives an ample description of all the stades. I will only discuss here a few inaccuracies. In the first place I do not observe any „dépression latérale à chacune des extrémités du sillon transversal“. — Secondly there is but one median

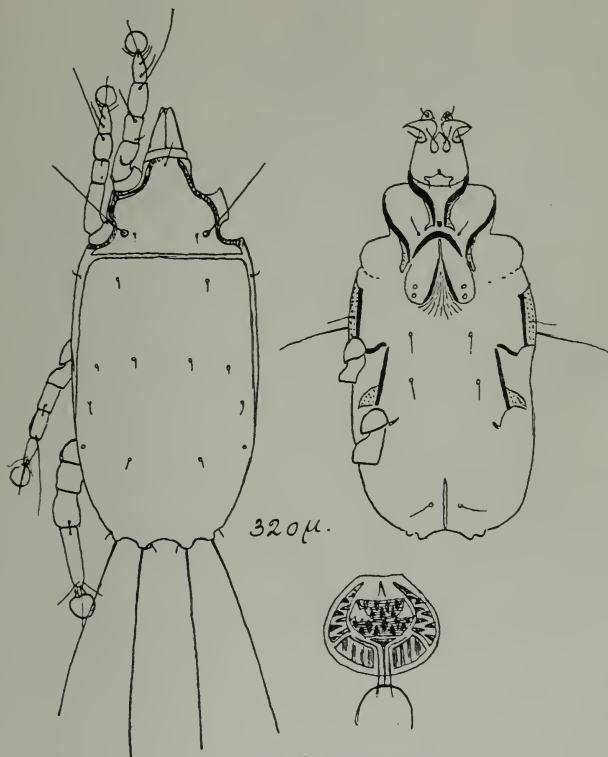


Fig. 11—13. *Chauliacia securigera* (Rob.). ♀.

vertical hair, not two. — The epimera I are free, but between their proximal ends there is a point-shaped sternum. — No mention is made of the two enormous transparent anal suckers. — His figure represents only the posterior portion of the abdomen of the male with the characteristic lobes.

Haller, 1878, only points out the low sexual difference in the fourth pair of legs.

Canestrini, 1878, gives a short description of the most characteristic peculiarities; evidently he too has not observed the



two large transparent anal suckers. Apparently he has not found the female, certainly the deutonympha.

Canestrini, 1879, only mentions the name.

Mégnin, 1880, only mentions the name in a „key“.

Haller, 1881, gives an ample description of the hypostome, accompanied by a tolerably good figure.

Trouessart, 1885, only mentions the name.

Canestrini, 1886, shortly describes the male and the deutonympha. Of the female he says „somiglia alla precedente“, which of course is possible, but I think there will be any difference as to the dorsal shields. This, however, I cannot say with any certainty, for I did not examine deutonymphae.

Groult, 1887; his description is too short to recognize the species sufficiently.

Berlese, 1892, delineates the male and the female sufficiently to recognize them. He has well observed that the „epimera antica inter sese“ are „discreta“.

Berlese, 1897, only mentions the name in a „key“.

Oudemans, 1905, calls the species *Chauliacia securigera*, and gives good reasons for doing so.

I do not like it necessary to describe the species amply; I only give here the explanation of my figures.

Fig. 11: represents the female, dorsal side.

„ 12: the female, ventral side.

„ 13: the ambulacral caruncle.

„ 14: the male, dorsal side.

„ 15: the male, ventral side.

„ 16: the hypostome.

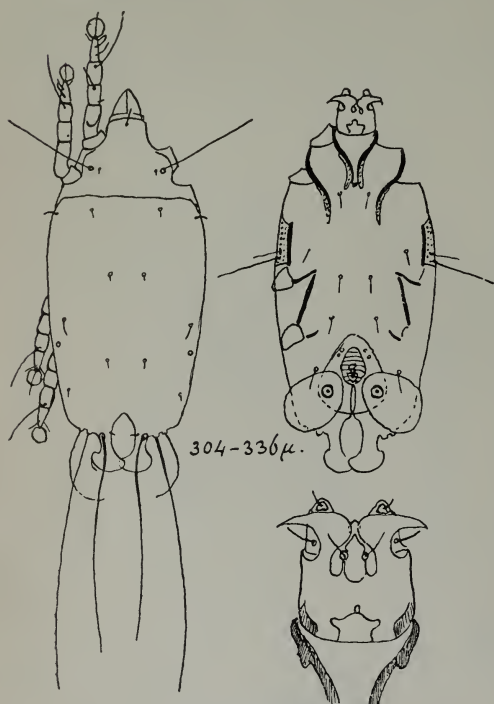


Fig. 14—16. *Chauliacia securigera* (Rob.). ♂.

It is evident, that *Eustathia cultrifera* and *Chauliacia securigera* are relate to each other; for both are provided with only one median vertical hair, and both their males are provided with enormous transparent enlargements of the anal suckers, arrangements hitherto unknown in *Acari*; but the difference in the dorsal shields and is the shape of the creatures themselves is reason enough to place them in two different genera.

3. *Varchia gambettae* Oudms. (Fig. 17—19.)

1904, Nov. 1. *Pteralloptes gambettae* nov. sp. Oudms. in Ent. Ber., no. 20. p. 194.

1905, Juli 1. *Varchia gambettae* Oudms. in Ent. Ber., v. 1. p. 240.

**Female.** — Length 295  $\mu$  (fig. 17). — Colour pale yellow. — Shape like that of *Pteralloptes stellaris* (Buchh.), but wider; abdomen posteriorly five-lobed; medial lobe small; legs III and IV extraordinarily developed, so that this ♀ simulates a ♂. — Texture smooth on the shields; finely wrinkled in the unprotected parts.

Dorsal side (fig. 17). Anterior dorsal shield more than one and a half time longer than wide, with straight sides

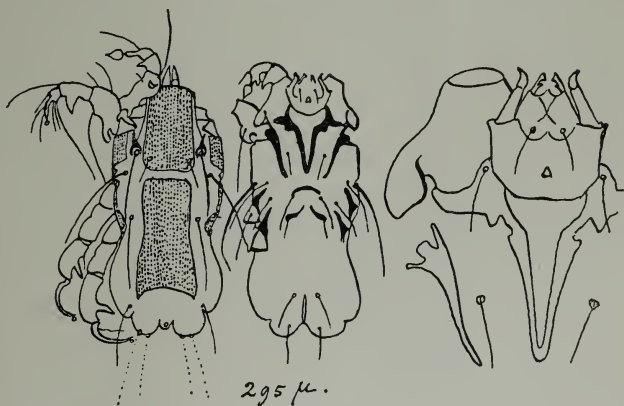


Fig. 17—19. *Varchia gambettae* (Oudms.). ♀.

and slightly rounded angles. Posterior dorsal shield about two and a half time longer than wide, with rounded anterior angles, slightly sinuate lateral sides and concave posterior side. Anterior lateral sides small, parallelogram-shaped. Middle lateral shield small and narrow, simulating a dorsal coxal plate. Posterior lateral shield slightly wider, simulating a dorsal coxal plate. Finally we must direct our attention to somewhat  $\Lambda$ -shaped

chitinizations behind the place of attachment of trochanteres II, and having the dorsal long prosomatic hair between their branches. We have a rudiment of a small shield which is usual in *Mégnesia* and which I will call omoplatal plates II. — Hairs. Of the long prosomatic hairs I have already treated. Inward of them, but in the posterior corners of the anterior dorsal shield are planted their accompanying hairs; these are much smaller, not minute though. On a line which separates the prosoma and metasoma, near the lateral edge of the body, in the weak skin, there is a pair of hairs as long as the width of the body. Inside of the posterior lateral shields there is a third pair of long hairs as long as the width of the body. Behind and a little outside of the posterior angles of the posterior shield, almost before the incision between the exterior and middle abdominal lobes there is a fourth pair of shorter hairs. Finally the posterior edge of the abdomen bears 2 pairs of minute tubercles which are of course the pedestals of the usual 2 pairs of long abdominal edge hairs. On the medial small abdominal lobe a little hole: the former copulation hole, at present probable outlet of odoriferous gland.

Ventral side (fig. 18). Epimera I proximally united, but not forming a sternum, with distinct and wide external clavicular processes. Epimera II as long as epimera I, distally wider. Epimera III and IV, small, scarcely longer than their trochanter, if any. Shields. Outside of epimera I and II and inside of epimera III and IV there are very narrow rudiments of coxal plates. Epigynium scarcely crescent shaped. Internal genital apparatus a pair of comma shaped rods, directed forward and inward with their tail. Anus terminal. Hairs: a pair of short thin hairs between epimera I and II; a second pair of ditto inside of epimera III (before proximal end of epimera IV); a third pair on the tops of the crescent-shaped epigynium; a fourth pair on the external ends of the genital apparatus; a fifth and a sixth pair flanking the ends of the anal split. The lateral hair (before epimera III) is as long as the width of the body and its accessory hair is also long, thin and smooth.

Mandibles apparently provided with a two-toothed saw (fig. 19).

Maxillae with wide hypostoma ending in three blunt triangles. Palps with long first article and short crooked and sharply pointed end-article. Medial subapical tubercle distinct.

Legs. In all the legs there is a femorigenu. Legs I: the femoral part of the femorigenu shows ventrally (fig. 18) an external flat inward curved lobe, apparently a clasping-organ.



The genual part shows dorsally (fig. 17) a small backward curved flat process like a human nail. The tibia has the usual ventral triangular enlargement. The tarsus ends in a caruncle of usual type and dimensions. Legs II: the femoral part of the femorigenu with the usual thumb ventrally; the tibia with the usual triangular enlargement; the caruncle of the tarsus is minute. Legs III and IV enormously developed (for a female!); their tibiae with internal long flat stylus; their tarsi falciform, with minute caruncle.

Habitat: *Totanus flavipes* (*Gambetta fl.*).

Patria: Probably it has the same geographical distribution as the host.

Found by Dr. E. L. Trouessart.

Type in collection Trouessart.

4. *Trouessartia trouessarti* Oudms. (fig. 20—21.)

1904, July 1. *Trouessartia trouessarti* Oudms. in Ent. Ber., v. 1. p. 163.

**Female.** Length 544  $\mu$ . — Colour brick-coloured. — Shape that of *Trouessartia minutipes* (Berlese). — Texture polished on the chitinous, finely wrinkled in the weak parts.

Dorsal side (fig. 20) protected by two dorsal shields and partly by the side-shields. Anterior shield with two wings, protecting the coxal parts of the legs I, and with a median rounded lobe overlapping the proximal dorsal part of the head (the neck). At the level of implantation of legs II the shield has a deep lateral rounded incision to receive the implantation ring of the shoulderhairs, which are as long as the width of the shield. Between these two excavations there is a second pair of hairs which are as long as the width of the capitulum. The whole shield is finely punctate, but polished. — Posterior shield; anterior edge wavy, with 3 slight excavations; at the level of the implantation of legs III there is a deep lateral rounded incision, the edges of which are well chitinized and dark. Anteriorly to the first pair of hairs of the tail pieces the shield (and also the body) is suddenly a little enlarged. Above this enlargement are planted the first pair of abdominal hairs, the proximal half of which is long-fusiform, the distal half setiform; the length of this hair is as long as that of the abdomen (from the transverse line between the two shields till the hyaline membrane between the two tail-pieces). Between these long hairs there is a minute pair flanking the deep and narrow incision of the shield. At the end of the long and sharp tail-

pieces there is a second pair of long hairs like the first pair, but only as long as the width of the body before the legs III. The abdomen is deeply incised posteriorly, so that there are two tail pieces; this incision is wide, rounded anteriorly and slightly constricted in the middle. In this anterior rotundo there is a hyaline narrow margin; quite in the median line of it there is an extremely narrow canal. I had al-

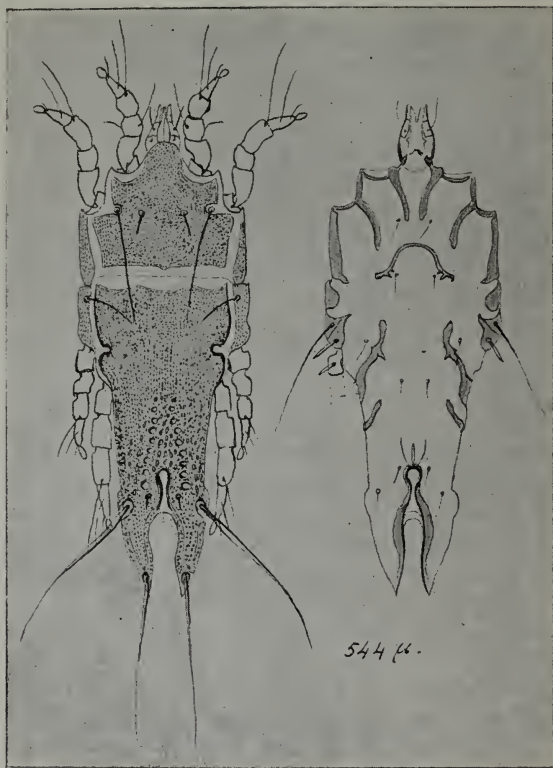


Fig. 20—21. *Trouessartia trouessarti* (Oudms.). ♀.

ready treated the individual with caustic kali as I examined it, so I did not observe anything running through this canal, but on examining the drawings which I possess of species of *Trouessartia* I was struck by the presence of an „appendiculum“ like a sickle in *Tr. appendiculata* (Berlese), which apparently comes forth out of a

similar canal, and of the presence of a minute appendiculum on the same place in *Tr. rosterii* (Berlese). (See now below sub *Tr. rosterii*). Before the canal the posterior shield (not the body) is deeply incised in the same way but much narrower, as the body between the two tail-pieces, i. e. rounded at the bottom of the incision, slightly constricted in the middle. The edges of the shield along this incision are well chitinized and brown. The shield is polished, yet provided with numerous pore-shaped punctations, and in a high triangle before the posterior incision of the shield with regularly arranged less chitinized round or oval depressions or pits, which give to the creature a beautiful appearance. — There are two pairs of lateral shields, an anterior pair before the transverse linear depression, which divides the body into a falsely called cephalothorax and abdomen, and a posterior one behind it. The anterior lateral shield anteriorly narrower; the posterior one anteriorly with a rather thick hair (directed inward).

Ventral side (fig. 21). Here the anterior lateral shield is also visible, anteriorly narrower, posteriorly with a mucro or slip inward. Curious is the ventral part of the posterior lateral shield. It has so deep an incision at the innerside that it apparently is divided in two parts, a rounded anterior one and a triangular posterior one. This latter bears a hair as long as three quarter of the creature's greatest width. Moreover it has fused with a shield shaped epimeron III, or a shield shaped portion of the coxal plate III, on which we observe a similar spur or thorn as on the trochanter of the leg III (fig. 21 to the left). — Epimera I wide, not touching each other, anteriorly with a branch directed towards the throat and an other longer one directed outward to the shoulder of legs I. Epimera II as long as I, a little curved, having a branch running forward towards the shoulders I and outward towards the shoulder II and touching here the anterior corner of the anterior lateral shield. Epimera III already mentioned, bear the well known spine behind the long side-hair, shield shaped, and most probably being a real (coxal) shield, as it is provided with a spur perfectly resembling that of the trochanter of leg III. — Epimera IV long, more or less S-shaped, with a pin inward halfway. We could call epimera V an epimeron-like pair of chitinous objects limiting posteriorly the coxal plate IV. — The anterior border of the transversal genital aperture provided with a chitinous semicircular bar, resting with its ends on two small transverse bars. Anal aperture longitudinal, quite before a chitinized marking resembling

the incision of the posterior dorsals shield. — Hairs. A pair of small extremely thin hairs outside of and close to the posterior end of epimera I; a second pair inside of and close to the transverse chitinous bars of the genital aperture; a third pair outside of and close to about the middle of the epimera III; a fourth pair free in the middle of the venter (if you prolong the so called epimera V you will meet them); a fifth pair close to and outward of the posterior end of the anal split; and finally a sixth pair near the edge of the abdomen, where this becomes broader.

Of the head and mouth-parts I can say nothing.

Legs normal. The anterior legs have their well known 5 joints: a small trochanter, a pedunculate femur, a short genu, a tibia which is short in legs I and twice longer in legs II, and a conical tarsus; but — and hereupon I will purposely draw your attention, the posterior legs have only 4 joints. If we now ask which joint is wanting, and how has it disappeared, by fusion or by vanishing, we must compare our legs with those of allied species. And then we come to the conclusion that the femur has really vanished, so that the remaining joints are the trochanter, genu, tibia and tarsus. (Compare a leg with that of *Tr. rosterii* [Berlese], fig. 22.) — Of legs III and IV the joints of each leg are rather equal in length.

Remarks. This species is closely allied to *Tr. rosterii* (Berlese) and *Tr. minutipes* (Berlese). It differs, however, from *Tr. rosterii* (Berlese) by having more pedunculated femurs I and II; by having the shoulder hairs not planted in the anterior dorsal shield, but in a lateral incision of it; by having a lateral incision in the posterior dorsal shield close to the place of implantation of legs III; and by having longer hairs on the abdominal or tail pieces. — It differs from *Tr. minutipes* (Berlese) by having a pair of smaller hairs between the shoulder hairs; by having a dorsal hair in the anterior end of the posterior lateral shield; and by having longer hairs on the abdominal or tail pieces.

Habitat unknown. The mite was included in a microscopical preparation containing also *Cheletes vorax* Oudemans and *Cheletes rapax* Oudemans, both found by Dr. E. L. Trouessart on the prepared skin of a bat original from the Isles of Mariannes. Possibly therefore it is original from any bird from the same Archipelago, and may have been imported in France on a prepared skin of a bird packed together with that of a bat. But it is also possible that it accidentally was included in the microscopical slide, although original from France.



*Patria* unknown; see above sub *Habitat*.

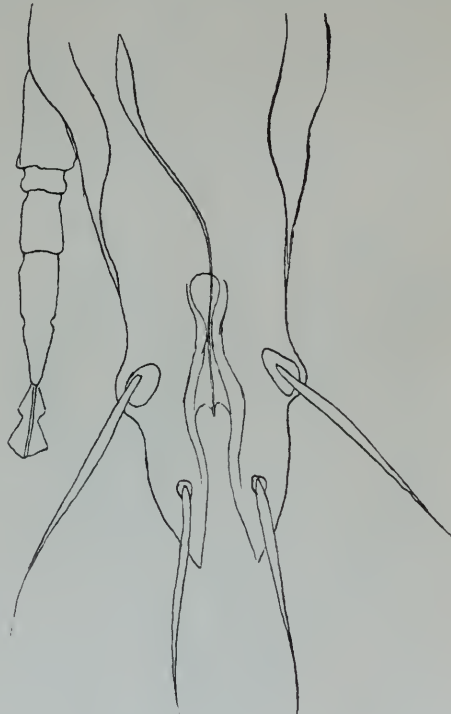
Found by Dr. E. L. Trouessart; see above sub *Habitat*.

Type in collection Trouessart.

5. *Trouessartia rosterii* (Berlese). (Fig. 22.)

In consequence of the discovery of an extremely narrow canal in the hyaline membrane between the tail-pieces of the foregoing species (see above p. 398), I carefully examined my own preparations and I discovered in three females of *Tr. rosterii* (Berlese), which are provided with a minute „appendiculum“, that this appendiculum is a little tube, through which goes another tube. Following this latter forwards, it proved to be an evacuation tube of a long spool-shaped bladder (fig. 22), which is situated not far from the trochanter of leg IV, in one individual to the left, in another to the right.

What may be the signification of this long tube and bladder. I think the small tube or „appendiculum“ is comparable with the copulation-tube of the female *Glycyphaginae* and the bladder is a receptaculum seminis. I know very well that the female does not copulate; nevertheless in the



female, after having cast its nubile-nymphal skin, this copulation-tube and the canal which joins the tube with the receptaculum seminis evidently persist. I confess that I could not discover a junction of this bladder with the oviduct or ovary.

Therefore it is also probable that this bladder has changed its physiological function, has changed in a gland, the products of which may serve to drive away enemies (e. g. *Cheletidae*).

There is another striking particularity in this species. Like the foregoing one its hind-legs have only 4 joints instead of 5, but here the reason of having a joint less than usually is quite another. We may at once observe in our drawing (fig. 22) that here has place a junction of the tibia and tarsus,



whilst the femur has become very small. I may remember here that in the foregoing species the femur has vanished, whilst the tibia and tarsus are still free.

6. *Alloptes gambettae* (Oudms.). (Fig. 23—27.)

1904, Sept. 1. *Alloptes gambettae* nov. sp. Oudemans in Ent. Ber., v. 1. no. 19. p. 172. ♀.

1904, Nov. 1. *All. gamb.* Oudms. in idem. no. 20. p. 195. ♂.

**Male** (Fig. 23). Length 320  $\mu$ ., greatest width 122  $\mu$ . — Colour yellow-brown. — Shape like that of *All. crassipes*, but slightly more elongate. — Texture smooth in the shields, finely wrinkled in the soft parts.

**Dorsal side** (Fig. 23). The anterior dorsal shield is much widened behind the trochanter II and on these wings are planted the anterior long hairs; so it has two oblique lateral edges, its posterior edge is slightly concave. The posterior shield is widest between trochanters III and IV so that it has two so-called wings behind the posterior lateral shields. Posteriorly it possesses a well chitinized medial internal bar (epimerite), which is one of the proofs that the abdomen originally was deeply cleft, and afterwards again joined. The anterior lateral shields extend far more backward than the anterior dorsal shield; they are triangular in shape. The posterior lateral shields are wedged between the anterior

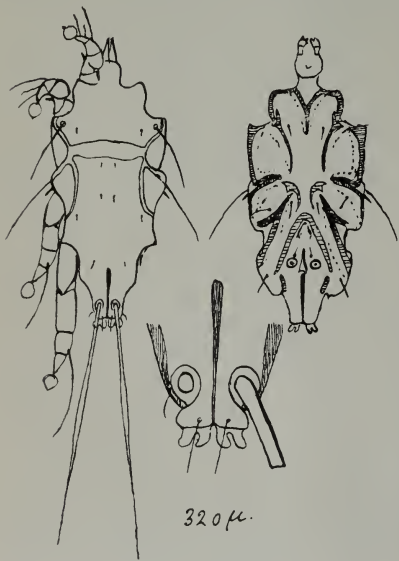


Fig. 23—25.  
*Alloptes gambettae* Oudms. ♂.

lateral shield and the posterior dorsal shield, and simulate a coxa of leg III. — Hairs: On the anterior dorsal shield the pair of long hairs (as long as the anterior shield itself) are planted behind the trochanters II. A little inside of these hairs there is a pair of minute hairs. On the posterior dorsal shield we first meet with the following minute hairs: one pair close to the anterior edge and close together; a second pair more

backward and close together; a third pair close to the edge and to the posterior angle of the posterior lateral shield; a fourth pair a little before the medial posterior chitinization; a fifth pair aside of the tops of the so called joined horns; a sixth pair on the tops of the horns; further the two long hairs on the end of the abdomen; in length they nearly equal the body; halfway they are slightly swollen spool-shaped. Posterior to the abdomen each horn is provided with a hyaline bilobed little piece (compare with *All. crassipes*).

Ventral side (fig. 24). Epimera I joined to a sternum. Epimera II long, slightly curve, extending nearly the proximal ends of epimera III. Epimera III rather long, lying against the posterior chitinous margin of the anterior lateral shield, and apparently united with the posterior lateral shield. Epimera IV enormously developed with an enormous proximal epimerite extending to the posterior edge of the trochanter III. Further chitinizations; the margin of the body along the trochantères I and between epimera I and II; the ventral margins of the anterior lateral shields; two curve commalike epimerites running from the proximal ends of epimera III, overlapping the proximal ends of epimera IV, toward the top of the  $\Delta$ -shaped epiandrium. Finally two short chitinous internal bars (epimerites) are observeable there where we should search for a „fifth epimeron“. Shields. Outside of epimera I and II and inside of epimera III and IV there are narrow rudiments of coxal plates. The anterior lateral shields are plainly visible and provided with dark chitinized margins. The posterior lateral shields are not suffixed ventrally, so that no portion of them is noticeable on the ventral side. Epiandrium enormously developed,  $\Delta$ -shaped. Genital aperture apparently also  $\Delta$ -shaped with well chitinized lips (or is this structure an internal genital apparatus?). Penis apparently minute; I could not observe it. Genital suckers: I could only see one pair, represented as point in the drawing. Anus touching the medial rodlike chitinization, i. e. the top of the original incision, excavation or cleft; this is a second proof of the chitinization being an abdominal longitudinal diaphragma, a result of the rejunction of two original „horns“. Anal suckers relatively well developed, flanking the anus and distant from each other a little more than their own diameter. Hairs: Lateral hairs apparently planted in the soft skin between the two lateral shields. Accessory lateral hair pin-like and behind the main-hair. Further we observe the following minute hairs: one pair aside of the posterior end of the sternum, near the anterior end of epimera II; on pair inside

(behind) the epimera III; one pair inside of the epimera IV (between the proximal end and the comma-shaped epimerite); one pair just before the anal suckers, and finally one pair on the distal margin of the coxal portion IV.

Mandibles and maxillae normal.

Legs. Genu I and II with dorsal enormously developed „elbow“, apparently fused with femur I and II so that we have here a femorigenu; the genu bear on their ventral side a pin-like hair, simulating the „thorns“ on the ventral side of the fore-legs of *Analgeae*. Legs I and II moreover very crooked, S-shaped. Legs III and IV on the contrary stretched. Their trochanteres enormously developed; there femora and genu united to a femorigenu, as long as the trochanter.

**Female.** Length 344  $\mu$ . — Colour brown. — Shape elongate, like that of other *Alloptes*, with parallel sides between legs II and III. — Texture smooth in the shields; finely wrinkled in the unprotected pars.

Dorsal side (fig. 26). Anterior shield occupying the whole space between legs I, legs II, the mandibels, the

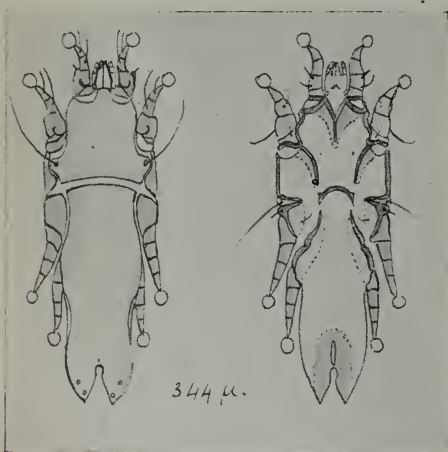


Fig. 26—27.

*Alloptes gambettae* (Oudms.) ♀.

anterior lateral shields and the posterior shield; its length is about one third of the total length of the creature; it is widened behind legs II; here is shown an almost circular widening on which is planted the long hair; behind this widening it is even wider than between legs II; its posterior edge is a little concave. Anterior lateral shields narrow, anteriorly and internally excavate to receive the widened parts of the anterior shield. Posterior lateral shields much wider

than the anterior lateral ones; internal edge a little convex; they simulate coxae, as the legs III seem to be only prolongations of these shields; posterior edge oblique and somewhat concave. Posterior shield two times longer than the anterior one, anteriorly a little convex; so there is only a narrow unprotected

band of skin between the anterior and posterior shields. Posterior incision almost triangular with rounded top. So called horns or abdominal pieces almost triangular with somewhat convex edges. Hairs: No vertical hairs. The two anterior hairs are planted on the wing-like widenings of the anterior shield, behind trochanteres II, and are about as long as legs II. The posterior abdominal hairs were wanting, but the species is sufficiently characterised by the wing-like widenings of the anterior shield behind legs II.

Ventral side (fig. 27). Epimera I joined to a sternum reaching a line which goes through the proximal ends of trochanteres II. Epimera II slightly longer than epimera I nearly reaching the epigynium. Epimera III more or less L-shaped, short, and touching with the angle of the L the lateral edge of the body. Epimera IV nearly accolade-shaped, long. Between legs II and III an L-shaped chitinous bar, which apparently is a ventral continuation of the anterior lateral shield. Between this chitination and epimera III there is a very narrow triangle of unprotected skin on which a distinct scar of a hair fallen out; probably this is the accompanying hair or little pin; the longer one, which is very short in this species is planted on the angle of the L-shaped epimera III. A pair of minute hairs inside of epimera II, a pair of dito inside of epimera III, on the edge of coxal plate III. Shields: Outside of epimera I and II the narrow triangular coxal plates; inside of epimera III and IV the coxal plates III and IV. Moreover a distinct almost oval or elliptical anal plate surrounding the anus and the abdominal incision. Epigynium somewhat crescent-shaped but with distinctly widened horns.

Mandibles usual, small (fig. 26).

Maxillae usual (fig. 27), small (the head is comparatively small).

Legs short (fig. 26) with only 4 free joints. The trochanteres I and II short, triangular; the trochanteres III and IV distinct on the ventral side (fig. 27), triangular. Femorigenu I and II wide and dorsally provided with a comparatively enormous dorsal and inward elbow. Tibia and tarsi long.

Habitat: *Gambetta flavipes* and *Totanus calidris*.

Patria: Probably the geographical distribution of the species is the same as those of the birds.

Found by Dr. E. L. Trouessart.

Type in collection Trouessart.

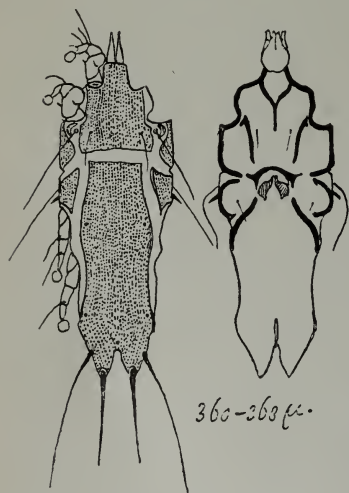


7. *Alloptes ditrichus* (Oudms.) (Fig. 28—29.)

1904, Nov. 1. *Alloptes ditrichus* nov. sp. Oudemans in Ent. Ber., v. 1. no. 20. p. 195.

**Female** (fig. 28). Length 360—368  $\mu$ . Width 120 bis 128  $\mu$ . — Colour dark brown. — Shape elongate with parallel sides between legs II and III, than tapering with sinuous sides backward, abdomen bilobate, legs shorter than the width of the abdomen. — Texture of the shields smooth; of the soft skin finely wrinkled.

**Dorsal side** (fig. 28). Anterior dorsal shield longer than wide, greatest width between the anterior lateral shields



and slightly wider than the distance between trochanteres II. There is an indication of omoplatal shields II in the form of two minute crescents outside of the long prosomatic hairs. Anterior lateral shields usual, with rounded posterior widest portion. Posterior dorsal shield long, leaving a rather narrow band of soft skin before it self, more than three and a half times longer than wide, with straight anterior edge and sinuate lateral edges, at the level of caruncles IV reaching the lateral edge of the abdomen. Posterior lateral shields simulating dorsal coxal plates III, though somewhat remote from trochanteres III, trapezoidal, with inward base. Hairs: The anterior pair

Fig. 28—29.

*Alloptes ditrichus* (Oudms.). ♀.

of long hairs are planted in the soft skin between the anterior dorsal and the crescent shaped omoplatal shields II. Their accompanying smaller hairs, inside of them, are planted in the dorsal shield. Moreover I discover only 2 pairs of minute pits (of minute hairs most probably) in the lateral margin of the posterior dorsal shield, there where the shield is widest, i. e. on a level with femorigenu III and tarsus IV.

**Ventral side** (fig. 29). Epimera I united to a sternum; trunk and branches of the Y of equal length. Epimera II as long as epimera I, almost straight. Epimera III semicircular (in fact they are a combination of the primitive epimeron and the chitinized distal margin of the original coxal plates III). Epimera IV



longer than epimera II. Margin of prosoma strongly chitinized, epimerite-like. Sufflexed margin of anterior lateral shields ditto, having even an inward epimerite-like prolongation. Epigynium crescent shaped with external widening. Internal genital apparatus of the usual type but small. Anus terminal. Hairs: Inside of the middle of epimera II a pair of short and thin hairs; outside of (before) the proximal half of epimera IV a pair of ditto. Lateral hair very thin and planted before the short thorn-like accompanying one; both exactly lateral.

Mandibles apparently normal.

Maxillae apparently normal.

Legs very short, even shorter than the width of the abdomen. All the legs with femorigenu. Femorigenu I and II thick, with ventral femoral thorn like hair (not a widening of the femur itself) and dorsal genual globiform ellbow.

Habitat: *Totanus flavipes*.

Patria: Probably the geographical distribution of bird and mite are the same.

Found by Dr. E. L. Trouessart.

Type in collection Trouessart.

## Eine neue *Hemiteles*-Art. (Hym.)

Von K. Pfankuch, Bremen.

In einer Determinanden-Sammlung, die ich von Herrn Dr. Kuhl gatz (Danziger Provinzial-Museum) vor einiger Zeit empfing, entdeckte ich als neu die *Ichneumonide*

*Hemiteles bizonatus* ♀ m.

Dieses ♀ fällt auf durch die Färbung der Fühler, indem Schaft und Geißelglied 1 und 2 einerseits, andererseits die letzten 8—10 Glieder der Spitze schön gelbrot gefärbt sind, während die Mitte breit schwarz gezeichnet ist.

Der Körper ist durchgehends matt, nur die Hinterleibs-segmente 4—7 sind glänzend; die Flügel sind mit je 2 dunkeln Binden geziert.

Kopf: Quer, hinter den hervortretenden Augen sich rundlich stark verschmälernd; Gesicht nach unten hin sich schwach erweiternd; Wangen verlängert und verbreitert, breiter als die Basis der Oberkiefer; Fühler nach der Basis hin sich ein wenig verjüngend, erstes Geißelglied viermal, das zweite Glied dreimal so lang als breit; Scheitel tief ausgerandet.

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