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A collection of cavernicolous and termitophilous Arachnida from the Belgian Congo

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With 9 figures in the text.

The small collection of Arachnida kindly entrusted to me for identification by Dr E. DARTEVELLE of the Musée du Congo Belge, consists for the most part of Araneae, one species each of the orders Opiliones and Uropygi being also represented in it. The material was collected during the years 1948 and 1949 by Mr N. LELEUP, mainly in various caves of the Belgian Congo but also in a few localities outside of caves such as gallery forest, the dried beds of rivers and the nests of termites.

My sincere thanks is extended to Dr E. DARTEVELLE and the authorities of the Musée du Congo Belge for enabling me to examine this interesting collection of Arachnids, some of which belong to genera which have not previously been recorded as living in caves.

The faunal list, with the exception of four specimens which are incomplete or are too small to permit identification, can be set out as follows.

ORDER UROPYGI

Schizomus montanus HANSEN.

ORDER OPILIONES

Gonomma troglodytes n. sp.

ORDER ARANEAE

Family OONOPIDAE

Triaeris berlandi n. sp.

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Family PHOLCIDAE

Pholcus sp.

Family THERIDIIDAE

Sphyrotinus sp.

Family ARGYOPIDAE

Pachygnatha leleupi n. sp.

Tetragnatha cylindriformis n. sp.

Cyrtarachne termitophila n. sp.

Family THOMISIDAE

Thomisops eremita n. sp.

Paramystaria flavoguttata n. sp.

Family CLUBIONIDAE

Selenops cavernicolus n. sp.

Gtenus fagei LESSERT.

Gtenus dirus THORELL.

Gtenus sp.

ORDER UROPYGI

Schizomus montanus HANSEN. — Text-fig. 1.

S. montanus HANSEN, Wiss. Ergeb. Schwed. Zool. Exped. Kilimandjaro-Meru, 20. Arachnoidea, 5. Tartarides, p. 83, Pl. 4, 1910.

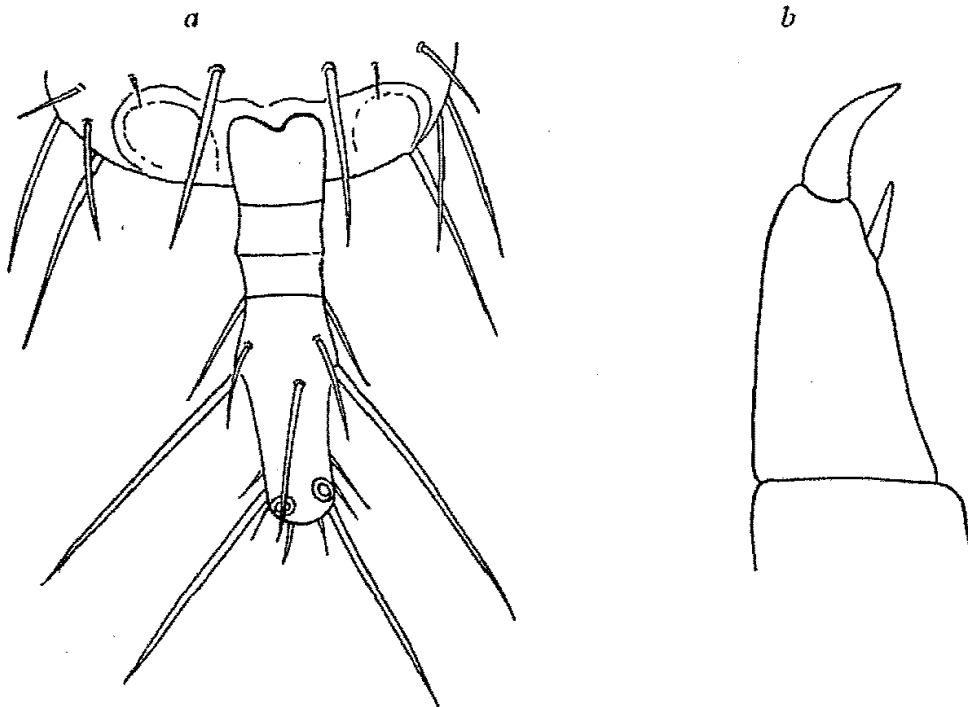


Fig. 1. — *Schizomus montanus* HANSEN ♀; *a* flagellum and terminal segment of abdomen seen from above, *b* tarsus of pedipalp from the side.

Four females are contained in the collection, three of them from caves at Thysville, (N. 5, 7.IX.49; N. 10, 22.VII.49; N. 11, 24.VI.49); the fourth female was taken in a cave at M'Boma (N. 1, 26.VIII.49). These specimens agree closely with HANSEN's description but differ in the claw of the pedipalp being less than 1/2 the upper length of the tarsus and in the inferior spine of the tarsus being longer and thicker, Fig. 1 *b*; the terminal segment of the flagellum Fig. 1 *a*, is somewhat longer in proportion to the rest of the appendage. The femur of leg I is considerably longer than the tibia, which is again three-fourths the length of the patella. In spite of these differences I do not think that these forms merit specific separation from HANSEN's types.

ORDER OPILIONES

SUBORDER Laniatores

FAMILY PHALANGODIDAE

Genus CONOMMA LOMAN

Conomma troglodytes n. sp. — Text-fig. 2.

Type, 1 ♂, in a cave at Thysville (N. 3, 18.VIII.49).

Colour. Dorsal and ventral surfaces of body orange, appendages a little lighter.

Dorsal surface. Ocular tubercle (Fig. 2 *a*) low, rising almost directly from the anterior margin of carapace, with a few enlarged pointed granules in the middle of its posterior surface; area just posterior to ocular tubercle with small rounded irregular granules about 3 rows deep, III with a pair of enlarged pointed granules in the middle, IV with 1 such granule in the middle; free tergites with 2 rows of granules, those of the anterior one smaller, at least 1 enlarged conical granule in the middle of each posterior row and some others at irregular intervals more or less enlarged; lateral margin of dorsal scute with a single row of minute granules; between this row and the groove defining the lateral margin of the areas, a few minute irregularly scattered granules.

Ventral surface. Inferior surface of coxae covered with small, evenly distributed granules, anterior margin of I with 3-4 enlarged granules; trochanter IV at its distal posterior apex with a strong pointed tooth; free sternites with a regular and conspicuous row of rather enlarged

granules, posterior to this row a much less regular one of much smaller granules.

Pedipalp as in Fig. 2 *b* seen from the inner side; dorsal surface of femur with a row of 8 conspicuous teeth at fairly regular intervals, inner surface near apex with a large conical spine-tipped tooth directed

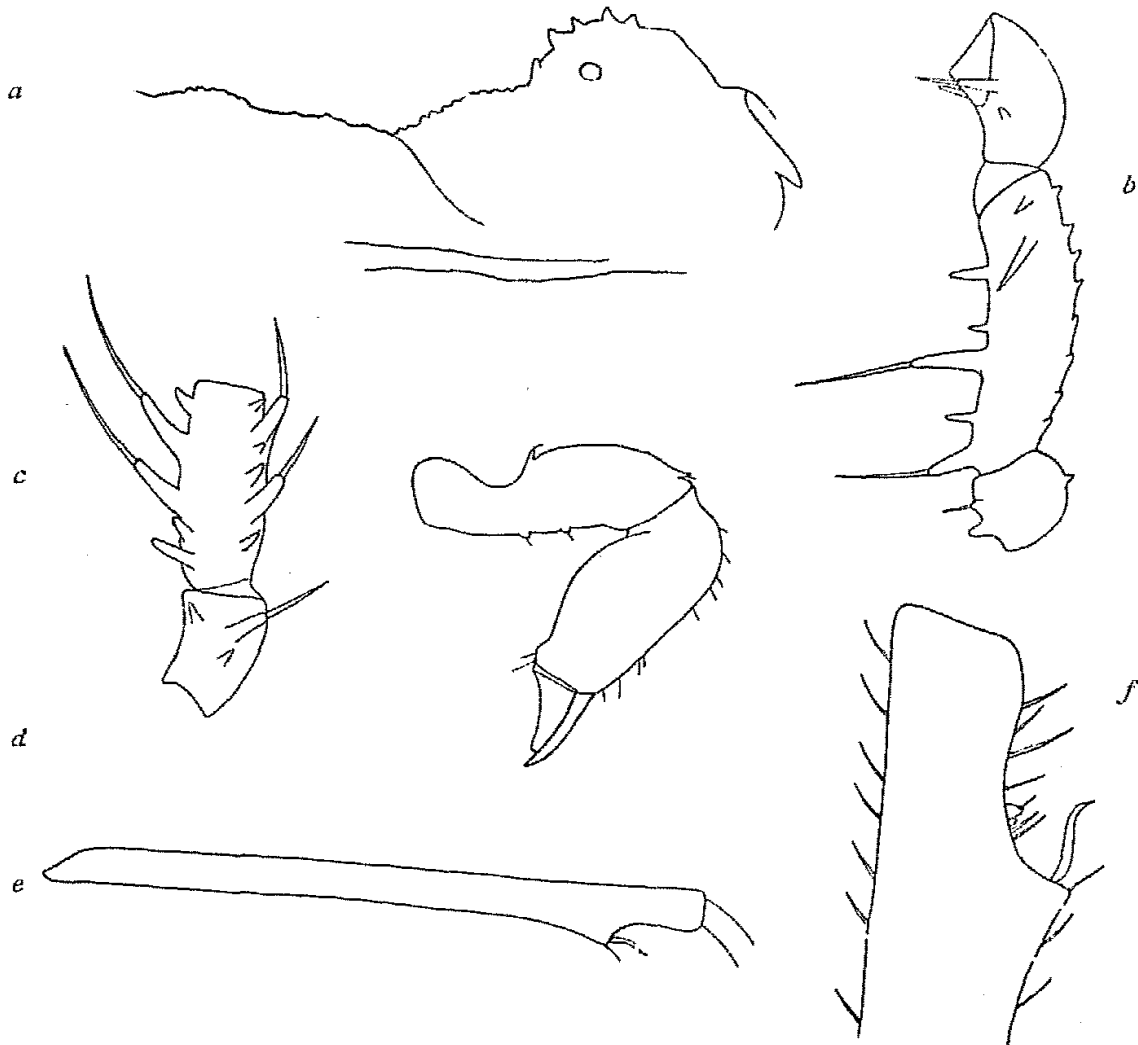


Fig. 2. — *Conomma troglodytes* n. sp. ♂ ; *a* anterior end of body from the side *b* trochanter, femur and tibia of pedipalp from inner side, *c* patella and tibia of pedipalp from below, *d* chelicera from outer side, *e* tibia of leg II, *f* apex of the same enlarged.

inwards almost at right angles to the segment when seen from above, a much smaller tooth distal to it; patella and tibia as in Fig. 2 *c* seen from below, inner side of patella with 1 large, 1 small tooth, outer side with only 1 small tooth; tarsus with 3 conical spine-tipped teeth on each side below, the apical pair shorter and weaker than the other two.

Chelicerae as in Fig. 2 *d* seen from outer side; basal segment with 2 conspicuous pointed granules above.

Legs III and IV distinctly stouter than the anterior ones, the trochanters and patellae of these legs incrassate and more or less rounded; coxa IV enlarged, its width distinctly exceeding the sum of coxae I-III, its lateral margin (seen from above) with moderate sized serrated teeth; femur IV sigmoid, the dorsal and ventral surfaces of femur to metatarsus with a row of small granules, giving them a serrated appearance; remaining legs with more or less regular rows of minute granules; tibia of leg II with secondary sexual modification as in Figs. 2 *e*, *f*. Tarsal segments 4 : 20 : 5 : 6; terminal section of tarsus in legs I and II with 2 segments.

Dimensions. Length of body (chelicerae excluded) 2.8, pedipalp 4.5, leg II 13.7 mm.

Other material, 1 immature specimen (N. 12) from a cave at Thysville (22.VII.49).

This specimen resembles *C. annobomum* ROEWER in the sexual modification of tibia II (6, p. 38, Fig. 63); it differs from it in the much lower ocular tubercle, in lacking a tooth on patella IV and regular transverse rows of enlarged granules on areas I-IV, and in the larger number of tarsal segments of the second leg.

ORDER ARANEAE

FAMILY OONOPIDAE

Genus **TRIAERIS** E. SIMON

Triaeris berlandi n. sp. — Text-fig. 3.

Type, 1 ♀, entrance to a cave at Thysville (N. 6, 18.VIII.49).

Colour. Cephalothorax and dorsal scute orange, cephalothorax a little darker at the sides, margination of sternum reddish-brown; abdomen with two large brownish purple oval markings between the ventral scute and spinners.

Cephalothorax only a little longer than wide, truncate anteriorly, the ocular area occupying half its anterior width, its anterior margin with 3 setae on each side, the lateral one much shorter than the remaining two, Fig. 3 *b*.

Eyes, Fig. 3 *b*; large, much as in *macrophthalmus* BERLAND, (1, Fig.

33), the anterior eyes separated by more than their diameter and less than their longest diameter from the edge of the clypeus.

Mouthparts as in Fig. 3 *d*, maxillae at their inner apices with a brush of stiff hairs.

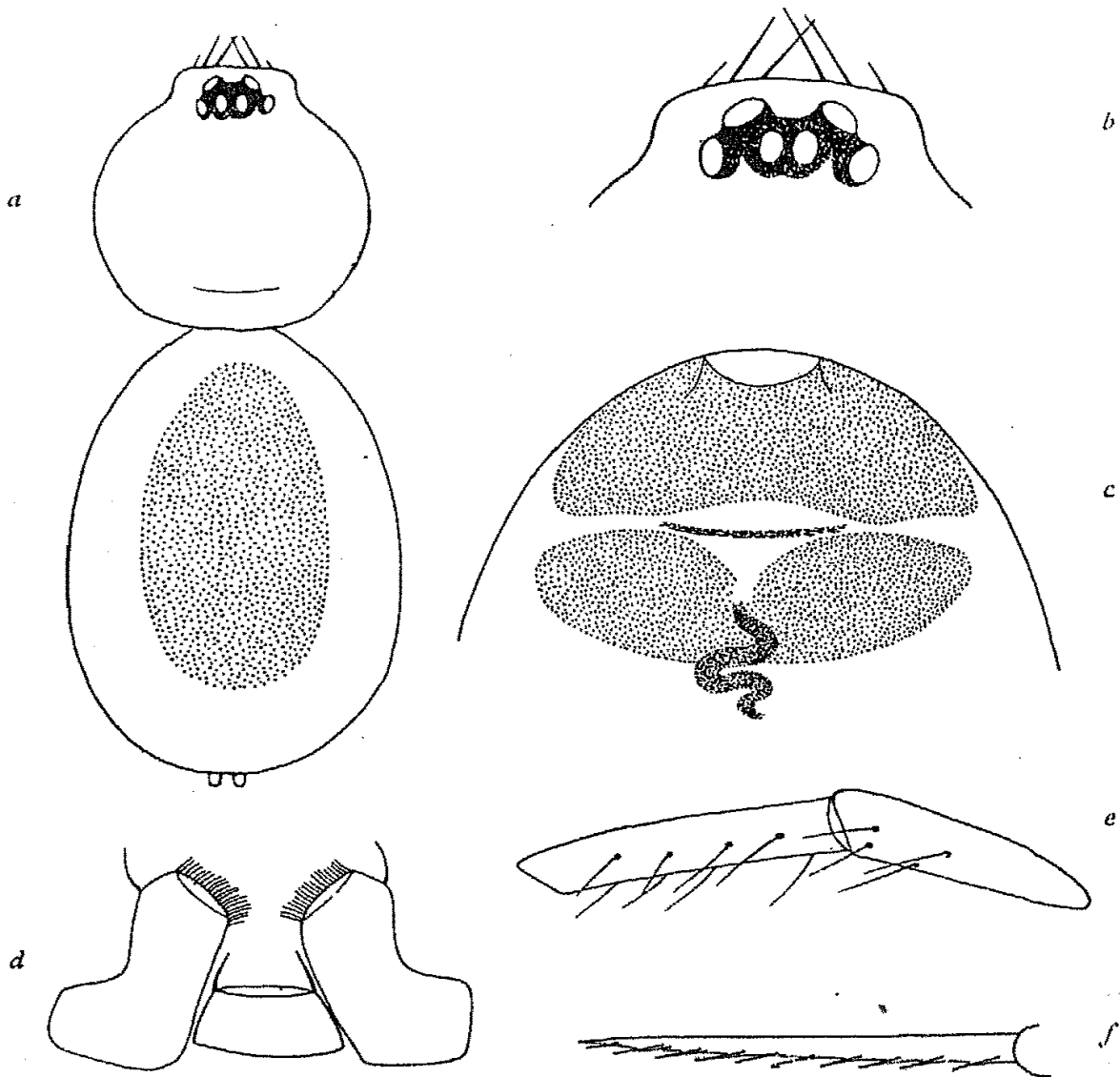


Fig. 3. — *Triaeris berlandi* n. sp. ♀ ; *a* outline of body, *b* anterior end of cephalothorax, enlarged, *c* epigastric region, enlarged, *d* labium and maxillae, *e* patella and tibia of leg I, *f* one the tibial spines enlarged.

Abdomen. Dorsal surface with a well defined oval scute as in Fig. 3 *a*, occupying more or less the middle of the dorsum but nearer to the anterior than to the posterior end of abdomen.

Ventral surface as in Fig. 3 *c*, the inferior scute divided, the posterior half passing backwards beyond the epigastric region.

Legs moderately long and fairly thickset, trochanter I longer than those of the remaining legs; tibia and patella I as in Fig. 3 *e*, seen from the side, tibia inferiorly with two fairly regular rows of 3-5 enlarged spines, patella inferiorly with 2-2 similar spines. These spines not essentially different from the numerous setae of the legs but distinctly larger, provided with accessory filaments, Fig. 3 *f*, and springing from large convex chitinous processes.

Dimensions. Length of cephalothorax 0.74, total length 1.9 mm. This species, though also resembling *T. macrophthalma* BERLAND, appears to be most closely allied to the European species *T. stenaspis* SIMON, judging from the figures given by BRISTOWE of this species (2, p. 878). It differs from *macrophthalma* in the shape of the cephalothorax and the size and position of the dorsal scute, as well as in the shape of the maxillae and labium. It differs from the other African species, *T. equestris* SIMON, in the dorsal scute being oval and not parallel-sided. From *T. stenaspis* it differs in the more posteriorly situated dorsal scute, judging by BRISTOWE's Fig. 13, *loc. cit.*

FAMILY PHOLCIDAE

Genus PHOLCUS WALCK.

Pholcus sp.

1 immature ♂ (N. 9). In the bed of a dried stream at Kyende (7.VII.49).

FAMILY THERIDIIDAE

Genus SPHYROTINUS SIMON

Sphyrotinus sp.

1 immature ♀ (N. 7) from a cave at Kakontwe (1.VIII.48).

This specimen judging by the arrangement of the eyes, should be attributed to this genus. BERLAND (1, p. 164) has described the ♂ of a species, *Sphyrotinus chopardi* from British East Africa, which he assigns with reservations to this genus. In view of the fact that *Sphyrotinus* is properly limited to South America, both these forms may perhaps be regarded as belonging to a separate but allied African genus when more material is available for study.

FAMILY ARGYOPIDAE

Genus PACHYGNATHA SUNDB.

Pachygnatha leleupi n. sp. — Text-fig. 4.

Type, 1 ♀ (N. 9) beneath stones at the entrance to a cave at Kakontwe (I.VIII.48).

Colour. Cephalothorax and sternum dark reddish-brown, contrasting strongly with the yellow legs; abdomen above light brown, speckled with white spots; two lateral rows, each of 3-4 triangular brown

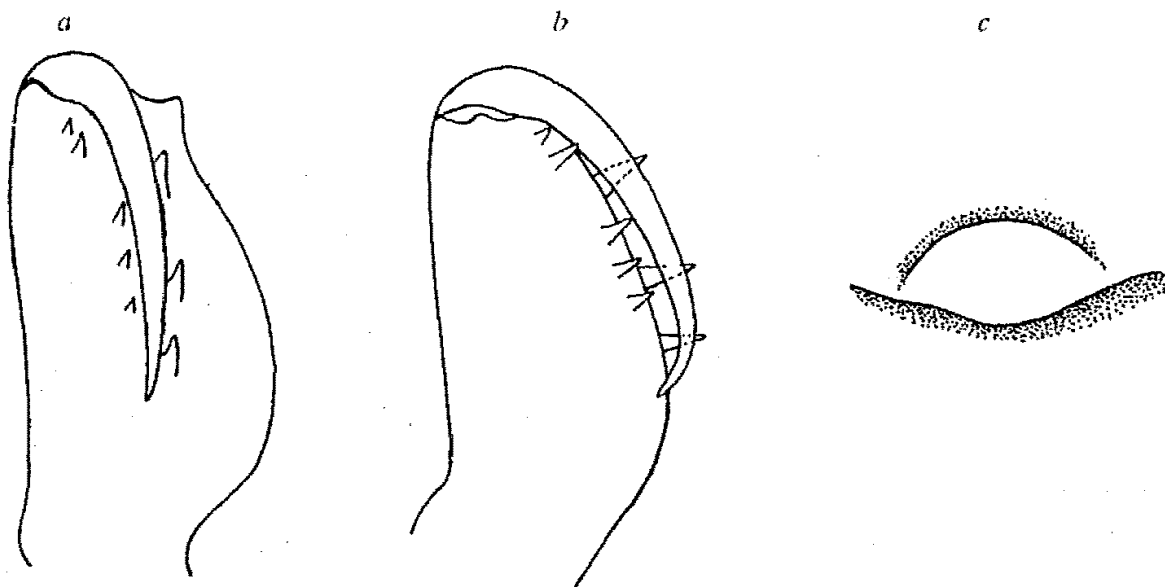


Fig. 4. — *Pachygnatha leleupi* n. sp. ♀ ; a chelicera from inner side, b from below, c vulva.

markings, between them some short irregular transverse bars, those above the spinners more distinct and much wider; sides and ventral surface with symmetrical dark stripes and spots on a light brown background; legs yellow, tarsi and to a less extent metatarsi, a little darker.

Eyes. Anterior median eyes separated by about 1 1/2 times their diameter; posterior row moderately recurved, the medians about twice their diameter apart, a little further from the laterals; median eyes subequal or the anteriors a little larger; median quadrangle as wide in front as behind, a little longer than wide; laterals contiguous on each side, the anterior a little larger than the posterior; anterior medians the length of the median quadrangle from edge of the clypeus.

Chelicerae seen from the inner side as in Fig. 4 a, from below as in

Fig. 4 *b*. Anterior margin with a conical projection near the base of the fang, in addition with 3 large sharp teeth, the middle nearer to the basal than to the apical one; posterior (inferior) margin with 5 smaller teeth, 2 near the base of the fang separated by a space from 3 more proximal teeth, these equidistant, the most distal of these three the largest of the series.

Vulva as in Fig. 4 *c*.

Legs I, II, IV, III, long and slender, especially the tarsi and metatarsi, unspined, the tibiae and distal segments with a regular row of setae dorsally and ventrally.

Dimensions. Total length 3 mm.

The species resembles *P. mucronata* TULLGREN (9, p. 147, Fig. 68) in its colouring and in having the chelicerae rather swollen; it differs in the detailed structure of the chelicerae, having 5 instead of 4 teeth on the inferior margin and with the fang longer in relation to the whole chelicera.

Genus **TETRAGNATHA** LATR.

Tetragnatha cylindriformis n. sp. — Text-fig. 5.

Type, 1 ♀, (N. 13) in gallery forest of the Kashibi, Kanzenze (I.49).

Colour. Cephalothorax, appendages, sternum and maxillae yellow, without markings, labium yellowish-brown, abdomen brown.

Eyes. Anterior row strongly recurved, distinctly more so than posterior row, a line touching the upper margins of the medians would pass in front of the laterals; medians 1 1/2 times diameter of laterals, 1 1/2 times their own diameter apart and a little more from the laterals. Posterior row moderately recurved, medians a little smaller than anterior medians, their own diameter apart and a little further from the laterals; median quadrangle as wide in front as behind and a little longer than wide; laterals on each side nearer to each other than are the medians to each other, the posterior larger than the anterior; clypeus 1 1/2-2 the diameter of an anterior median eye.

Chelicerae. Superior margin with 6 stout triangular teeth decreasing progressively in size towards the base of segment, Fig. 5 *c*; inferior margin with 10 much smaller teeth, more or less equal-sized except the third from the base, which is distinctly smaller, Fig. 5 *a*; both margins in addition with a large apical tooth, that of the inferior margin smaller and distinctly curved; fang seen from the inner side with a sigmoid flexure, bent downwards in the middle but more or less parallel to the segment in its distal half, Fig. 5 *b*, a distinct tooth near its basal insertion above.

Legs, I, II, IV, III, very long and slender; anterior femora, especially of leg I, distinctly stouter than those of posterior legs; leg I much longer than II. All legs with a few weak setae on the femora, patellae (1) and tibiae, 1 at the base of each metatarsus above.

Abdomen long cylindrical and of almost even width from base to apex; spinners situated at extreme apex.

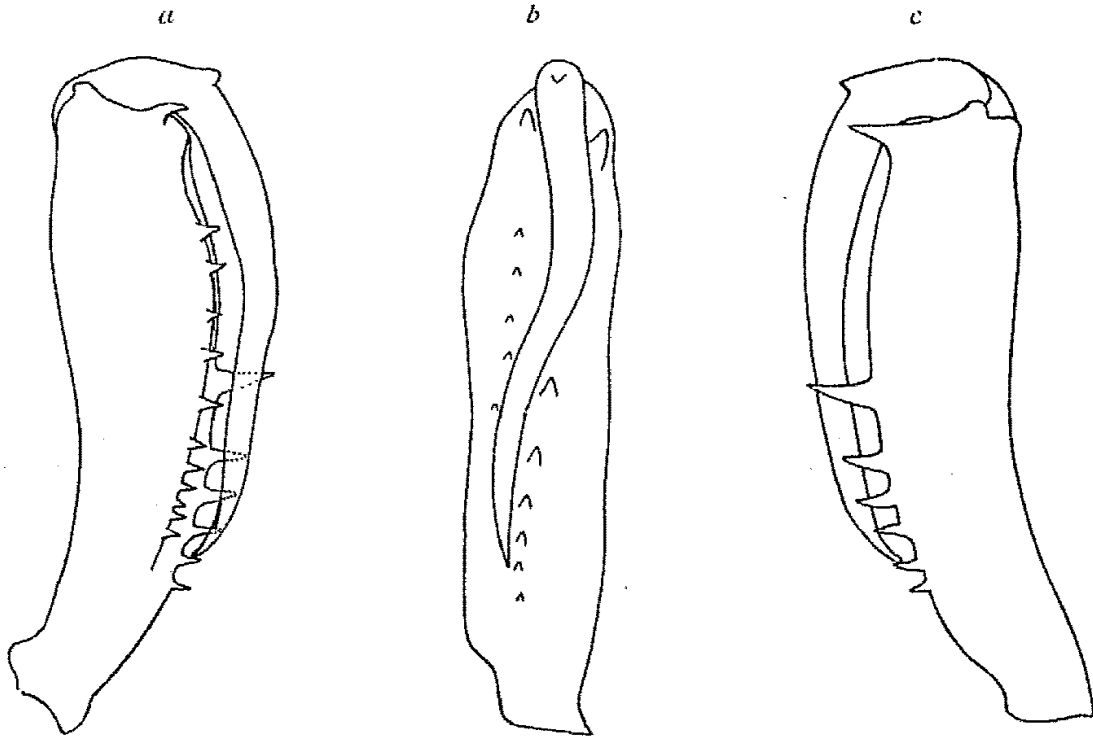


Fig. 5. — *Tetragnatha cylindriciformis* n. sp. ♀; a inferior surface of chelicera, b from inner side, c superior surface.

Dimensions. Length of carapace 2.7, of chelicera 2.5, of abdomen 6 mm.

This species appears to belong to SIMON's section D (7, p. 274). It is very similar to *T. foai* SIMON (♂), differing from it in details of the dentition of the chelicerae, in the posterior median eyes being a little further from the laterals than from each other, and lacking a black apical annulation on the tibiae and metatarsi of the legs.

Genus **CYRTARACHNE** THORELL

Cyrtarachne termitophila n. sp. — Text-fig. 6.

Type, 1 ♂ (N. 11), in a small termite nest, Kundelungu Plateau (1. I. 1949).

Colour. Cephalothorax orange, a little darker anteriorly; dorsal

scute of abdomen orange, a little lighter than cephalothorax; ventral surface of abdomen, sternum and legs yellow; apices of femora, patellae and tibiae of the legs tinged with light reddish-brown.

Cephalothorax with 3 large black setae, a fourth considerably smaller behind the posterior median eyes.

Eyes. Anterior row (seen from above) strongly recurved, medians the largest of the eyes ($1\frac{1}{2}$ times as large as posterior medians), their

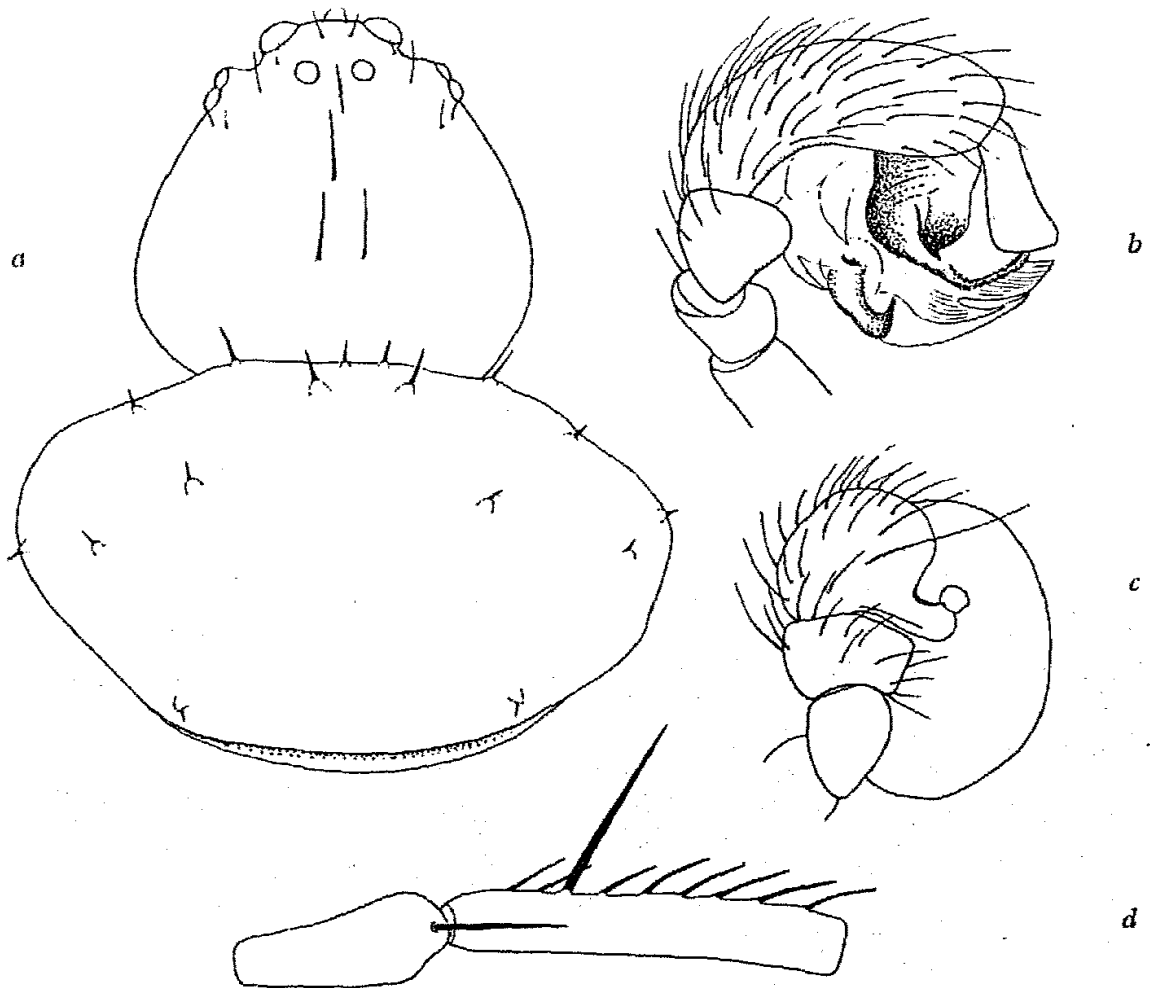


Fig. 6. — *Cyrtarachne termitophila* n. sp. ♂; a cephalothorax and abdomen, b pedipalp from below and a little to the side, c the same from directly above, d patella and tibia of leg I from above.

own diameter apart or a little more, a little nearer to the laterals; posterior row moderately recurved, medians almost twice as large as the laterals, a little more than their diameter apart and $1\frac{1}{2}$ -2 as far from the laterals as from each other; median quadrangle (seen from above) twice as wide as long and much wider in front than behind;

laterals on each side contiguous and subequal; clypeus a little less than the diameter of an anterior median eye.

Abdomen as in Fig. 6 *a*, 1 1/2 times as wide as long, covered with a chitinous scute indistinctly bordered at the margins, with a number of rather small setiferous conical tubercles arranged as in Fig 6 *a*; these surmounted by strong black setae some of which have been lost; sigilla very indistinct, a pair near the anterior margin of abdomen.

Pedipalp as in Fig. 6 *b* seen from below, from above (drawn *in situ*) as in Fig. 6 *c*; tarsus above at its postero-lateral angle with a small chitinous spherical process.

Legs with stiff setae, tibia of leg I in its basal third on inner side with a long spine-like seta directed inwards almost at right angles to the segment, a little below it a row of 8 enlarged spinelike setae, Fig. 6 *d*, seen from above. Remaining legs without these setae but with numerous less regularly arranged setae.

Dimensions. Cephalothorax 0.9, total length 2 mm.

This species differs completely in a number of characters from the only male described from Africa, *C. finnegani* LESSERT (5, p. 249) but resembles it in the disposition of the eyes. It may possibly be the male of one of the six other African species, all of which have been described from the female alone and of which a list has been given by LESSERT (*loc. cit.*, p. 251).

It is most unusual for an Argyropid spider to be found in a termite nest, and as far as I am aware no males or females of this family have been recorded from such a habitat.

Genus **THOMISOPS** KARSCH

Thomisops eremita n. sp. — Text-fig. 7.

Type, 1 ♂ (N. 7), in fungus growth of a termite nest, Plateau de Langa (23.VIII.49).

Colour. In general orange yellow, body and appendages clothed with scattered white hairs, a pair of narrow white stripes forming a lyre-shaped marking reaching from the tubercles of the posterior lateral eyes to near the posterior end of cephalothorax; another less distinct white stripe near the lateral margin of the carapace and almost parallel to it, reaching from opposite the posterior lateral eye to the posterior lateral angle of the carapace; tubercles of the eyes white. Abdomen with purplish-brown markings as in Fig. 7 *c*, and just posterior to these two sinuous transverse white stripes, otherwise orange yellow.

Cephalothorax roughened with a covering of small regularly disposed granules, none enlarged except 1-2 at the postero-lateral angles of carapace.

Eyes. Seen from above posterior row a little more strongly recurved than anterior row, laterals a little smaller than the medians, the four eyes equidistant or the medians a very little further from each other than from the laterals; anterior row seen from in front fairly strongly recurved, the medians $\frac{2}{3}$ the size of the laterals and a little further from them than from each other; median eyes subequal (or the ante-

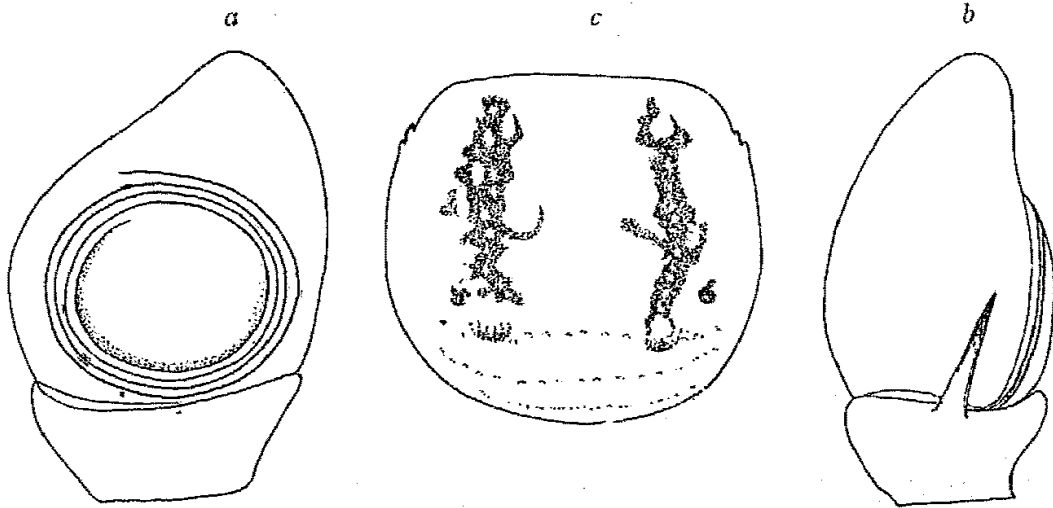


Fig. 7. — *Thomisops eremita* n. sp. ♂ ; *a* tibio-tarsus of pedipalp from below, *b* the same from outer side, *c* abdomen from above.

rior a little larger) forming a quadrangle much wider behind than in front, its anterior width a little greater than its length; laterals on each side equal, nearer to each other than are the medians to each other; distance between anterior median eyes and edge of clypeus greater than the length of the median quadrangle.

Abdomen above coriaceous, without enlarged granules except 1 or 2 at the sides near its anterior margin; coxae, sternum and legs clothed with white hairs, the latter without spines.

Pedipalp. Tibia and tarsus as in Fig. 7 *b*, seen from outer side, tibial process short and dagger-like, forming a fine point but broad basally; tarsus as in Fig. 7 *a* seen from below.

Dimensions. Total length 3.3 mm.

This form resembles *T. pupa* KARSCH most closely but its colouring is quite different and it lacks the coarse granulation of the abdomen; the tibial process of the pedipalp in general resembles that of *pupa*

but is broader and shorter, being less than half the length of tarsus, while in *pupa* it is somewhat more than half, according to LESSERT's figure (4, p. 117, Fig. 34).

The habitat of this species is peculiar. I have however found numerous females and males of *Thomisops nigroannulata* LAWRENCE living in grassy soil at the base of the walls of buildings in Natal where both ants and termites were abundant. It is possible that these Thomisidae either feed on termites or are associated with them in some other way.

Genus **PARAMYSTARIA** LESSERT (?)

Paramystaria flavoguttata n. sp. — Text-fig. 8.

Type, 1 immature ♀ (N. 8), beneath stones at the entrance of a cave at Kakontwe (I.VIII.48).

Colour entirely black, only the dorsum of abdomen posteriorly with two large oval yellow spots, Fig. 8 *a*, contrasting very markedly

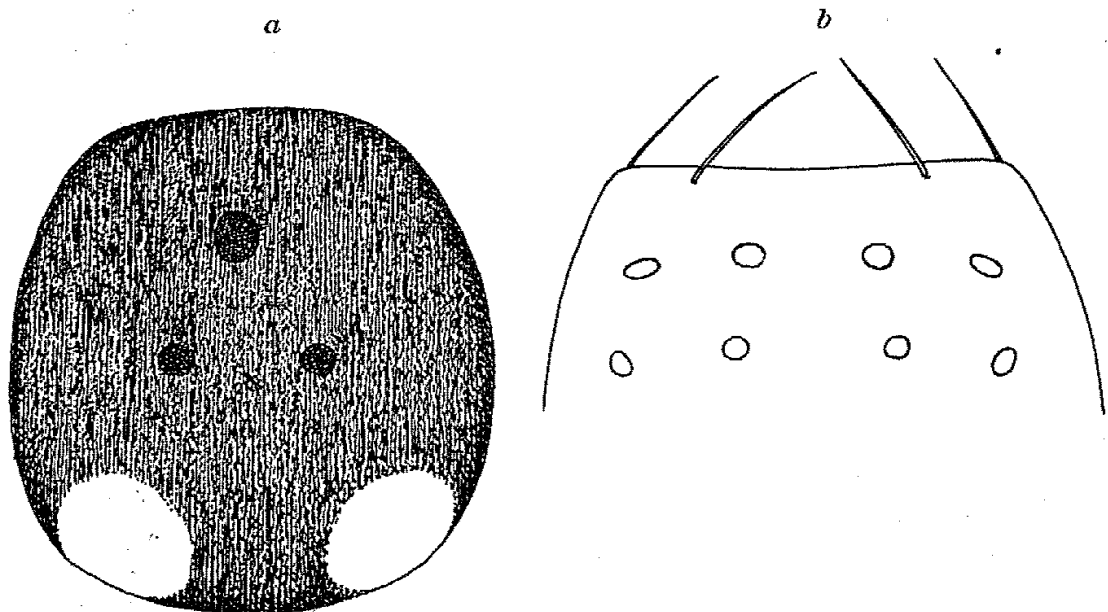


Fig. 8. — *Paramystaria flavoguttata* n. sp. ♀ ; *a* abdomen, *b* anterior end of cephalothorax from above.

with the rest of the body; leg III with metatarsi and tarsi orange, tibia reddish-brown, patella a little darker; remainder of leg III and all other legs entirely black, ventral surface of body entirely black, the yellow spots of the abdomen not visible from below.

Eyes as in Fig. 8 *b*, the anterior a little larger than posterior medians; median quadrangle distinctly wider behind than in front and wider in front than long; the two rows feebly and about equally recurved.

Chelicerae with 2 small teeth on superior margin, 1 larger triangular tooth on inferior margin.

Abdomen granular above, with 3 small distinct muscle impressions as in Fig 8 *a*, the sides grooved.

Legs. Femur I with a row of 5 forwardly projecting spines in its middle half, all femora with a setiform spine in basal third above; patellae with 2 dorsal spines, one near the base, 1 at apex; tibiae with 2 dorsal and 2 long ventral spines; anterior legs longer than posterior, the tarsi and metatarsi especially longer and more slender; metatarsus I about equal to tarsus and metatarsus IV.

Dimensions. Length of cephalothorax 1.6, of abdomen 2.2 mm. The species is ascribed with some doubt to this genus; in general appearance it resembles a small species of *Stiphropus* more than any other genus. The anterior tarsi and metatarsi however are long, slender and of even width, not incrassate apically as in typical *Stiphropus*; the well developed spines of the legs and the dentate chelicerae also separate it from this genus. The species although immature should be easy to recognise on account of its striking and characteristic colouring.

FAMILY CLUBIONIDAE

Genus SELENOPS LATR.

Selenops cavernicolus n. sp. — Text-fig. 9.

Type, 1 ♀ (N. 2), in a cave at M'Boma (26.VIII.49).

Colour. Anterior femora blackened anteriorly except in apical fifth, anterior tibiae with 2 distinct broad blackish-brown bands, anterior metatarsi blackish-brown except at extreme apices; abdomen above mottled with brown and yellow spots, with some blackish-brown symmetrical markings, remainder of body and legs mottled brown.

Eyes. Anterior row seen from in front distinctly recurved, a line joining the lower surfaces of the laterals would pass a little below the centres of the medians; medians $2/3$ - $3/4$ the diameter of the laterals and separated by their own diameter, less than their radius from the laterals; anterior medians about $2/3$ their diameter from the edge of the clypeus.

Abdomen. Posterior fourth with 2 conical tufts of modified hairs

along each lateral margin, these hairs different in colour and structure from any others of the abdomen, being light yellow and incrassate with blunt tips, Fig. 9 *a*. The tufts themselves are quite conspicuous and can be easily distinguished, Fig. 9 *b*.

Vulva as in Fig. 9 *c*.

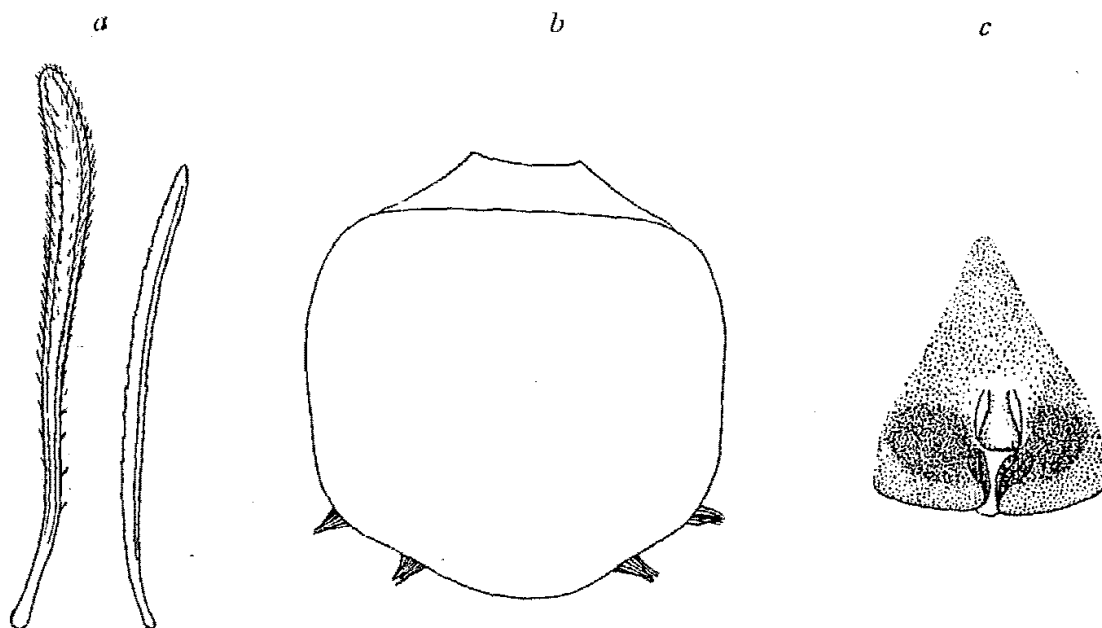


Fig. 9. — *Selenops cavernicolus* n. sp. ♀ ;
a modified hairs from one of the tufts shown in outline of abdomen (*b*); *c* vulva.

Dimensions. Length of carapace 4.7 mm.; total length 12 mm. This form belongs to the *radiatus* group of *Selenops*, the anterior tibiae having 3, the anterior metatarsi 2 pairs of inferior spines. I know of no other species of *Selenops* which has 4 tufts of hairs on the abdomen as described above, and this should serve to identify the species.

Genus **CTENUS** WALCK.

Ctenus fagei LESSERT

C. fagei LESSERT, Rev. Zool. Bot. Africaines, XXVII, 3, p. 326, figs. 1, 2, 1935.

2 adults and 2 immature ♀♀ (N. 2 and 10), 30-80 metres from the entrance of a cave at Sendo (Thysville), 19.V.49; 1 immature ♀ (N. 7), from a cave at Thysville (9.VI.49); 3 immature ♀♀ (N. 8), from a cave at Thysville, 30 metres from the entrance (30.V.49).

Ctenus dirus THORELL

C. dirus THORELL, Bih. Svensk. Vet. Akad. Handl., Bd. 25, Afd. IV, 1899.

1 ♂, 1 ♀ (N. 6), from a cave at Kakontwe (1.VIII.48); 1 ♂ (N. 5), 1 ♂, (N. 3) and 2 ♀ ♀ (N. 4 and 6), from a cave at N'Gombe (13.VIII.49); 1 ♂ (N. 1), from a cave at Wene (31.VII.49).

These large specimens agree well with the description and figures given by DES ARTS (3) in his monograph of the genus. They are by far the largest cave-living Arachnids in the collection.

Ctenus sp.

1 immature ♀ (N. 9), in a cave at Kiasi (4.VI.49).

This female has a quite different colour pattern and is obviously separable from the two other species of the genus recorded above.

REFERENCES

- (1) BERLAND, L. (1914). — Voy. de CH. ALLUAUD et R. JEANNEL en Afr. Orient. (1911-1912). Arachnida III, Araneae, pt. I, II.
- (2) BRISTOWE, W. S. (1948). — Notes on the structure and systematic position of Oonopid spiders, based on an examination of the British species. (*Proc. Zool. Soc. London*, vol. 118, p. 878).
- (3) DES ARTS, L. (1912). Zusammenstellung der Afrikanischen Arten der Gattung *Ctenus* (*Mitt. Naturh. Mus. Hamburg*, Jhg. XXIX, p. 183).
- (4) LESSERT, R. (1933). — Araignées d'Angola (*Rev. Suisse Zool.*, 40, N. 4).
- (5) LESSERT, R. (1936). — Araignées de l'Afrique Orientale Portugaise (*Rev. Suisse Zool.*, 43, N. 9).
- (6) ROEWER, C. F. (1949). — Ueber Phalangodiden. I. (*Senckenbergiana*, Bd. 30, N. 1/3, p. 38).
- (7) SIMON, E. (1892). — Histoire naturelle des Araignées, Vol. I.
- (8) SIMON, E. (1902). — Arachnides recueillis dans l'Afrique tropicale par M. EDOUARD FOA. (*Bull. Mus. Hist. Nat.*, 1902, N. 1, p. 513).
- (9) TULLGREN, A. (1910). — Wiss. Ergeb. Schwed. Zool. Exped. Kili-
mandjaro-Meru, Arachnoidea, Araneae.