

former supplying all four toes, the latter passing deep to supply the muscles. The external popliteal nerve divides into musculo-cutaneous, which runs down among the peroneals to the dorsum of the foot, and the anterior tibial, which breaks up into twigs for the extensor muscles of the leg, one fine branch descending to supply the extensor brevis digitorum muscle.

The small sciatic, internal pudic, and inferior gluteal nerve come from the 1st and 2nd sacral nerves; they have practically the human distribution. The 3rd, 4th, 5th, and 6th nerves form a long cord which runs along the side of the tail.

Summary of Points of Interest.

1. *Pedetes* possesses only two pairs of teats, showing that it is not in the habit of bringing forth many young at a birth; the presence of only one foetus in the uterus confirms this.

2. The upper incisors of *Pedetes* are smooth, those of *Dipus* are grooved, but the embryo of *Pedetes* also has grooved incisors.

3. The presence of the nail in the palm of *Pedetes*, described by Bardeleben, is confirmed.

4. Bardeleben's description of the radial ossicle or prepollex exactly describes this specimen; in the foetus the radial ossicle is a definite cartilaginous structure.

5. In the foot a structure apparently serially homologous with the radial ossicle was found; but it was attached to the distal instead of to the proximal row of tarsal bones.

6. The trachea was divided into two by a vertical septum.

7. There was no gall-bladder.

8. A study of the muscles showed that *Pedetes* was allied to the Dipodidæ, but had more hystricomorphine tendencies than those animals.

3. On new Species of Spiders from Trinidad, West Indies.

By FREDERICK O. PICKARD CAMBRIDGE, B.A.

[Received October 18, 1898.]

(Plate LIV.)

In this communication I propose to give descriptions of three new species of Spiders based on specimens collected by Dr. Walter Ince and Mr. Thos. Potter, of Port-of-Spain, Trinidad, and of one new species of which specimens are in the collection of the British Museum from the same locality.

The total number of species of Spiders from this island now represented in the British Museum amounts to eleven only, so that our friends who have been good enough to supply us with material will perceive that further consignments from that locality will be much appreciated.

The examination of Dr. Ince's collection has led to a very

interesting discovery, namely, that a large arboreal Theraphosid indigenous to Trinidad possesses, in both sexes, a stridulating-apparatus similar in general character to those hitherto found only amongst, and supposed to be confined to, the *Theraphosidæ* of the Ethiopian and Oriental Regions.

I had myself previously described one of these Spiders, a female, under the name *Santaremia longipes*, without, however, discovering the "lyra" and "pecten" of the organ in question. This specimen, too, had been deprived of the greater part of the long fringing hairs on the tibiæ and protarsi of the legs, so characteristic in the examples sent by Dr. Ince, and it was therefore relegated to the genus *Santaremia* and regarded as one of the burrowing Mygales. Mr. R. I. Pocock, too, had described a spider, also very worn and rubbed, the locality of which was doubtful, possessing a stridulating-organ, as *Psalmopœus cambridgii*.

There can be now no doubt that the females sent by Dr. Ince from Trinidad are identical with the spider described by Mr. Pocock; and probably the locality, doubtfully quoted as "East Indies," should now be rectified to "West Indies."

The important point, however, lies in the fact that hitherto, although certain members of the family *Dipluridæ* indigenous to the Neotropics possess a very distinct stridulating-organ¹, yet this is the first record of its occurrence amongst members of the family *Theraphosidæ* found in the Neotropics. It is too early to decide yet whether this fact will materially modify the classification of the *Theraphosidæ*, according to the presence or absence of this organ, or not. But the possession of two spurs beneath tibia i. of the male of the Trinidad spider certainly does not tend to simplify the question. None of the stridulating Oriental forms possess any spur beneath tibia i.; and the Trinidad species therefore does not appear to be simply an Oriental form, far away from the headquarters of its kith and kin, but rather a form nearly allied to *Avicularia*, *Tapinauchenius*, &c., abnormal only in the possession of the stridulating-organ.

I may here say that, thanks to the kindness of Mr. Thos. Potter, I have been able to examine a magnificent male of this fine species, all those sent by Dr. Ince having been females.

Being anxious to settle, too, whether this Spider was possibly *Tapinauchenius plumipes* (C. Koch)², I begged from M. E. Simon an example of what he regards as that species taken in Surinam, whence Koch's original type came. Although the Spider sent by M. Simon is exceedingly similar in general character, it, however, possesses no stridulating-organ at all, although the two spurs are present beneath tibia i. Another adult male sent me by M. Simon from Costa Rica possesses both stridulating-organ and tibial spurs, though it is certainly not of the same species as the Trinidad form.

The genus *Tapinauchenius* then, supposing, as we may reasonably

¹ F. Camb. P. Z. S. 1896, pl. xxxv. figs. 1, 2, 3.

² Die Arachniden, ix. p. 67, fig. 733. Hab. Surinam.

do, pending further material from Surinam, that M. Simon's male is identical with Koch's species from the same locality, is distinguished from the very closely allied genus *Psalmopœus* by the absence of the stridulating-organ.

I would like here to call attention to a characteristic feature in these arboreal Theraphosids. Without any doubt the long feathery fringes on the legs assist the passage of the Spider through the air, for though I have never witnessed such a passage in connection with these spiders from Trinidad, I have noticed that an *Avicularia*, if irritated off a tree high up, will leap with legs outspread and fall quite softly, the hairs on the legs resisting the air in the descent. An analogous character can be found on the tail of the Pigmy Phalanger, which assists it in its passage amongst the branches and from branch to branch.

Mr. Potter has also sent me some valuable notes on the habits of these interesting Theraphosids. He tells me that they live in chinks in the bark of trees and in holes in the trunks, being abundant also in the thatched roofs of the houses. The bite of one of these huge spiders proved severe, laying up the victim for a day or two with pains and feverish symptoms, but did not prove fatal. Their food consists of cockroaches and other Orthoptera, grasshoppers, locusts, &c.

Trustworthy information at first hand on these interesting points is very welcome, for although there is no great difficulty in securing information, it is by no means easy to persuade oneself that any of it is worthy of confidence.

The following List contains the names of all the Spiders represented in the Natural History Museum from the Island of Trinidad. It need scarcely be remarked that such a list is merely a beginning, and a very small one at that. Still we are very grateful to the kind correspondents who have enabled us to draw up any list at all, and look forward to a great deal more material being sent over for identification in the near future.

Fam. CTENIZIDÆ.

Pseudidiops hartii Pocock.

Mr. J. H. Hart.

Actinopus hartii Pocock.

Messrs. J. H. Hart, Beaven
Rake, and Dr. W. Ince.

Fam. THERAPHOSIDÆ.

Avicularia avicularia Linn.

Dr. W. Ince, Mr. Beaven
Rake, and the Zoological
Society of London.

Psalmopœus cambridgii Pocock.

Dr. W. Ince; Messrs.
Thos. Potter and C. Taylor.

Hapalopus incei, sp. n.

Mr. J. H. Hart.

Stichoplastus sanguiniceps, sp. n.

Mr. J. H. Hart.

Fam. DIPLURIDÆ.

Brachythele antillensis, sp. n.

Dr. W. Ince.

Fam. FILISTATIDÆ.

Filistata hibernalis Hentz.Dr. W. Ince and Mr.
Beaven Rake.

Fam. PISAURIDÆ.

Lycotenus palustris, sp. n.

Dr. W. Ince.

Fam. ARGIOPIDÆ.

Argiope argentata Fabr.

Mr. J. H. Hart.

Nephila cornuta Pall.

Mr. Beaven Rake.

Fam. CTENIZIDÆ.

ACTINOPUS HARTI Poc. (Plate LIV. fig. 1.)

♂. Total length excl. mandb. 12 mm. Carap. 5.5×5.5 .
Legs: i. 22—ii. 21—iii. 20—iv. 26.

♀. Total length 15 mm. Carap. 6×5.5 . (Specimens too soft to allow of further measurements being taken.)

Colour. ♂. Carapace and mandibles dull black-purple. Sternum, mouth-parts, abdomen, and legs olive-brown; pedipalpi somewhat paler.

♀. Carapace and legs dull clay-yellow; mandibles darker. Abdomen dull white-brown.

Structure. ♂. Carapace of the usual character peculiar to the genus. Caput narrowed behind and deeply indentate at the sides.

Eyes. Anterior row strongly procurved, slightly broader than the posterior. Centrals larger, one-fourth a diameter apart. Laterals set on tubercles two and a half diameters from centrals. Centrals one diameter from margin of clypeus, laterals almost on the margin. Central posteriors smaller than laterals, one transverse diameter from them; the latter three diameters from lateral anteriors. Central posteriors four transverse diameters from central anteriors.

Labium and maxillæ entirely devoid of spinules. Tibia of pedipalp almost as long as the femur, enlarged beneath at the base, more attenuate towards apex. Tarsus globular, slightly bilobate at apex. Bulb, viewed from the outside, short piriform, bilobate at base, strongly geniculate towards apex, which tends slightly outward and downward, with two sharp adjacent carinæ curved spirally round the outside of the apical half of the bulb (Pl. LIV. fig. 1.)

Tarsi and protarsi of the first two pairs of legs numerous spinose. Tibiæ i. and ii. with 10–11 spines and spiniform hairs beneath, toward the apex; the latter with 9–10 smaller sharp spines in addition on the outer side, 3 being in a row close to the apex. Patella iii. with a marginal row on anterior side of 8 stout spines and 12–13 spines on and adjacent to the posterior side, towards the apex. There are besides 20 and upward spines and spiniform hairs on the anterior area of the segment, and a row of four along the dorsal line. The tibia has on the apical margin about 20 spines, with a few smaller ones on the posterior side.

The protarsi and tarsi iii. and iv. are numerous spinous, the latter being densely scopulate, less so in i. and ii. The rastellum of the mandibles is simple, not dentate.

The outer margin of the fang-groove bears five, the inner six stout teeth, with a few smaller ones in the central area towards the base.

♀. General characters the same as in the male with the following exceptions:—The apex of the labium and the anterior margin of the coxæ of the pedipalp are studded with cuspules; those on the former numbering from 6–8. The outer margin of the fang-groove bears 7 teeth, the inner four, while the intermediate area bears 8 smaller cusps. The rastellum is set at its apex with 12–14 short blunt cusps. Tibia i. has five spines on the inner side.

The tarsi of all four pairs of legs are devoid of a true scopula, being furnished with a few hairs only.

A male and two females were in the collection sent by Dr. Ince, the latter probably not mature. Although one cannot be absolutely certain, it is probable that this Spider is the male of *A. hartii* Pocock.

Fam. THERAPHOSIDÆ.

HAPALOPUS INCEI, sp. n. (Plate LIV. figs. 8–10 & 12.)

Total length, ♂ 22·5 mm.; ♀ 27·5.

♂. Carap. 10 × 7·5 mm. Legs: i. 37·5—ii. 33·5—iii. 31·5—iv. 40.

♀. Carap. 11 × 9 mm. Legs: i. 35·5—ii. 32—iii. 30—iv. 42.

Colour. Carapace, legs, and abdomen entirely brown, clothed with olive-brown hairs and pubescence.

Structure. Eyes closely grouped, less than half a diameter apart. Anterior row strongly procurved, laterals slightly larger than centrals.

♂. Carapace very much compressed, in profile. Basal half of protarsus not scopulate, with a stout spine on the outer side and another at apex beneath. Tibia i. with two spurs at the apex beneath; the outer broad at its apex, bearing a spine on each side, the inner spur shorter with single spine on its inner side (Pl. LIV. fig. 8). Tibia i. also bears 3 spines (1–1–1) on the outer side, one being apical.

Protarsus ii. scopulate to base, with one spine on outer side and one at apex beneath. Tibia ii. with 3 spines (1–1–1) on outer side and 3 towards apex on inner side. Femora i. and ii. with a single spine on the anterior apical sides.

Protarsus iii. scopulate to within one-third of the base, with numerous spines. Tibia iii. numerous spinose. Femur iii. with an apical spine (sometimes absent).

Scopula of tarsus iii. and iv. divided by a band of setæ. Protarsus iv. not scopulate on basal half, numerous spinose; tibia iv. spinose but less numerous. Bulb of palpus simple, piriform, its filiform apex directed downward and slightly outward (Pl. LIV.

figs. 9 & 10). Inner basal angle of coxa of pedipalp and apical half of labium numerous spinulose.

The *female* is similar in general characters, the legs being more numerous spinose.

The protarsi of the pedipalp have a pair of spines on the inner side, a little before the middle, and four spines ranged round the apical margin on the inner side and beneath.

The protarsi of the first pair of legs have a pair of spines at the apex beneath, a smaller one on the outer side, and another in the centre towards the base beneath. The tibiæ and protarsi of iii. and iv. are numerous spinose.

This species, of which four adult males and several females were taken by Dr. Ince, appears to be a fairly common Spider in Trinidad. Other examples have been received from Messrs. Beaven Rake and Thomas Potter from the same Island.

The last-named gentleman has very kindly ascertained for me the habits of these small Theraphosids, which burrow in the ground somewhat after the fashion of *Eurypelma*. He says:—"The hole made by this spider is not lined with silk, so far as I can see; and if it is, the coating must be very thin and almost imperceptible. The direction of the burrow is generally at an oblique angle with the surface of the ground. Sometimes the hole is straight for a short distance, but it always winds about, and is more often irregular in direction, like a crab's hole.

"The earth removed by the spider is nearly always thrown away from one side of the aperture in a little mound of coarse pellicles of mould. The specimen I sent was taken from a burrow about ten inches deep and from five-eighths to three-quarters of an inch in diameter. I had two specimens taken from burrows near to each other, and, unfortunately, in captivity the larger spider, being a cannibal, devoured her weaker fellow prisoner." (Pl. LIV. fig. 12.)

Genus STICHOPLASTUS E. Simon,

Ann. Soc. Ent. Fr. 1889, p. 208.

STICHOPLASTUS SANGUINICEPS, sp. n.

♀. Total length 30 mm. (approx.). Carap. 12 long, 10 lat. Legs: i. 38—ii. 35—iii. 33—iv. 46. Protarsus iv. 11. Tibia iv. 8.5.

Colour. Carapace bright orange-red, clothed with short silky yellow hairs. Legs, palpi, and abdomen pale coffee-brown, clothed with fine lighter brown hairs. Sternum and coxæ of legs pale rufous brown.

Structure. In general characters similar to that of the type of the genus, *S. ravidus* E. S., from Venezuela. It differs, however, in the spinulation of the tibiæ of the first two pairs of legs. Tibia i. has two spines in a longitudinal row beneath, and one spine on each side of the apical margin beneath; (*ravidus* has four. *sec.* Simon). Protarsus i. has two spines in a longitudinal row towards the base beneath, and one at the apex beneath.

Tibia ii. has two spines in a longitudinal row beneath, one spine on the outer apical margin, and two on the inner apical margin beneath. Tibiæ and protarsi iii. and iv. are numerous spinose.

The scopula, in the present example, is more or less divided beneath the tarsi of all four pairs of legs. This points to the probability that the example is immature; probably only those of iii. and iv. are divided in the adult.

This species is obviously closely allied to *M. Simon's* type of the genus, *S. ravidus* E. S., but the difference in the spinulation of the tibiæ of the first two pairs of legs cannot be ignored. It is to be hoped that we shall soon have an opportunity of examining the males of this handsome Spider, which probably occurs under the bark of trees and in holes in the branches (*cf.* E. Simon).

A single female, scarcely adult, was taken by Mr. J. H. Hart, and another, still less mature, was sent by Dr. W. Ince, both from Trinidad.

Genus PSALMOPEUS Pocock¹.

Santaremia, F. Cambr. (in part, *longipes*)².

Femur iv. without scopuliform pad on the inner side. Legs not spinose; fringes on each side, especially the tibiæ and protarsi, with long silky hairs, longer than the diameter of the segments in the male, shorter in the female. Ocular area much longer than broad, nearly three times; anterior row of eyes distinctly procurved. Coxæ of pedipalp furnished with a highly specialized lyra, which, together with a corresponding pecten on the base of the mandible beneath, forms an organ of stridulation. Tibia i. with a pair of simple slightly curved spurs at the apex beneath, in the male sex only.

PSALMOPEUS CAMBRIDGII Pocock. (Plate LIV. figs. 2-7.)

(Sub *Santaremia longipes* F. Cambr. P. Z. S. 1896, p. 749.)

♀. Carapace 20 × 17.5 mm.; mandibles 8.5; ocular eminence 4 × 1.75. Legs: i. 77—ii. 68.5—iii. 60—iv. 70.

♂. Carapace 17 × 15.5 mm.; mandibles 7. Legs: i. 80—ii. 75—iii. 62—iv. 75.

♀. *Colour*. Carapace black, entirely clothed with olive-green or ochre-grey pubescence. Margins fringed with shaggy hair. Mandibles clothed at the base above with ochre-grey hairs passing into black towards the apex. Outer side clothed with a pad of short black hairs, fading away below. The margins of the fang-groove and mouth-parts clothed with fiery red hairs. The legs are all clothed with short ochre-grey hairs and olive-grey longer hairs, chiefly noticeable on the sides, where they assume, on the tibiæ, protarsi, and tarsi especially, the form of a plumose fringe. The

¹ Ann. Mag. Nat. Hist. ser. 6, xv. p. 178, pl. x. figs. 3-3b.

² Proc. Zool. Soc. 1896, p. 749.

protarsi of all four pairs of legs have a sinuous rust-red band, starting from the base (at the outer side in i. and ii., at the inner side in iii. and iv.), crossing the segment, and terminating towards the apex. The tarsi of all four pairs as well as of the palpi have a central rust-red band above. *Abdomen* clothed with olive-grey and ochre-grey hairs, having also a longitudinal narrow central dark band commencing towards the anterior margin, becoming narrower and more indistinct towards the spinners. On each side, diverging obliquely from a dilatation of the central band, are three slender indistinct brown bars. The shoulders of the abdomen are pale olive, while the apical two-thirds, at least, are suffused with darker brown. The ventral area is clothed with velvety black-brown hairs. Underneath, the tibiae and patellae of the palpi and of legs i. and ii. are clothed with a dense covering of deep chocolate-brown hairs. The femora of the first two pairs of legs and of the palpi, and the coxae and trochanters of all the legs, are clothed with a black-brown velvet covering of hairs. The last two pairs of legs are clothed with brown and ochreous-grey hairs mingled. Protarsi i. and ii. are scopulate entirely to the base, those of iii. almost to the base, those of iv. rather over halfway at the sides, but divided in the centre by a band of dark hairs.

Structure. Carapace in profile gradually rising towards the ocular eminence, moderately compressed. Thoracic fovea straight, transverse. Ocular eminence scarcely raised, much broader, two and a half times, than long. Anterior row of eyes slightly procurved, the longitudinal diameter of the laterals equal to the diameter of the centrals. The centrals $\frac{3}{4}$ of a diameter apart, $\frac{1}{2}$ from the laterals.

Eyes of posterior row smaller than those of the anterior. The laterals of both rows about half a transverse diameter apart.

Inner margin of fang-groove with 14 stout teeth, with two short rows of 5-6 minute teeth opposite the basal two or three on their outer side.

The fringe of hairs on the outer margin becomes obsolete towards the base, giving place to six or seven bristles, very stout at the base, filiform at the apex, set very wide apart (Pl. LIV. fig. 2). These constitute the pecten of the stridulating-organ. The coxae of the pedipalp (Pl. LIV. fig. 3) bear on the inner side below the suture a thin covering of grey hairs, and further down towards the margin and the base, close to the fringe of red hairs, lie a series of 15 long, curving, clavate, chitinous keys, the anterior ones the longest. These constitute the lyra (Pl. LIV. fig. 4) of the stridulating-organ.

The inner anterior angles of the coxae of the palpus and the apex of the labium are set with numerous minute cuspules. These become more scattered towards the middle of the labium.

The tibiae of the last two pairs of legs have one spine (iii.) and two spines (iv.) at their apex beneath; of the first two pairs, two spines at the apex beneath. The first pair of sigilla are situate at the base of the labium; the second pair very small, submarginal; the third pair circular, small, but distinct, remote from the

margin; the fourth pair elongate and very deep, impinging on the margin.

The spinners as in *Avicularia*. Tarsal claws 2, those of the first pair of legs with 3 minute teeth on the inner margin in the centre, of the fourth pair with 2 minute teeth in the same position.

Upwards of ten specimens, all of the female sex, many being immature, were taken by Dr. W. Ince on his estate, Dik-Mat-Karo, in Trinidad. A single female in the British Museum collection, already described by me as *Santaremia longipes*, was taken by C. Taylor, Esq., in Trinidad; and an adult male was recently received from T. Potter, Esq., of the Port-of-Spain, Trinidad.

These specimens have proved of exceeding interest, since they furnish us with the first case of a *Theraphosid* (other than a *Diplurid*) belonging to the Neotropics possessing the stridulating-organ on the mandible and the coxa of the pedipalp. I had not noticed this organ when I described Mr. Taylor's specimen under the genus *Santaremia*¹, and the characteristic fringe had been considerably worn from the legs.

But a still more interesting discovery perhaps lies in the fact that these specimens are also undoubtedly identical with the Spider described by Mr. R. I. Pocock as *Psalmopœus cambridgii*, the locality being doubtfully given "East Indies." It seems probable that this locality was an error on the part of the collector, and that Trinidad, or perhaps more broadly "the West Indies," constitutes the headquarters of the species.

This identity being established, *Santaremia longipes* becomes a synonym of *Psalmopœus cambridgii*. The further interesting point arises as to whether this stridulating-organ has been independently developed in this one Spider amongst the *Theraphosidæ* of the Neotropics, or whether *Psalmopœus* is closely allied to those Oriental forms of *Theraphosidæ* which, without exception, possess the stridulating-organ.

In one particular character, however, *Psalmopœus* differs from the Oriental forms. In the latter the males have no spur or spurs at the apex of tibia i. beneath, whereas the male of *P. cambridgii* from Trinidad possesses two.

In addition to the above examples, an adult male of a Spider taken in Costa Rica, belonging to the same genus, but probably of a different species, was kindly sent me by M. Simon.

Another Spider, an adult male, was also sent me by the same arachnologist under the name *Tapinauchenius plumipes* (C. Koch) from Surinam. This Spider, very much resembling the males from Trinidad and Costa Rica, has, however, *no trace* of the stridulating-organ. This fact would tend to establish the distinction between the genera *Tapinauchenius* and *Psalmopœus*, much though the Spiders resemble each other in general characters. I may remark that *Tapinauchenius sancti-vincentii* (Walck.)—*sec.* Simon—does not

¹ P. Z. S. 1896, p. 749.

possess any stridulating-organ. Surinam being the locality whence the type of *Mygale plumipes* C. K.¹ came, it seems pretty certain that M. Simon's identification is correct.

Fam. DIPLURIDÆ.

Genus BRACHYTHELE Ausserer,

Verh. z.-b. Ges. Wien, 1871, p. 173; Simon, Hist. Nat. Ar. i p. 180.

BRACHYTHELE ANTILLENSIS, sp. n.

♀. Total length 16 mm.

Colour. Carapace and mandibles black, clothed with golden hairs. Abdomen dull brown, clothed with fine black hairs. Legs pale yellow-brown, annulated and spotted with black or dark brown. The palpus has a dark spot at the apex of the femur on each side; the patella has two spots on each side, one near the base, the other towards the apex; the tibia has two dark annulations. Legs i. and ii. are absent. Leg iii. has, besides the same dark spots on the femur, patella, and tibia, two annulations on the protarsus. In the fourth pair of legs the annulations are less distinct.

Structure. There is no special structure different from the general characters of members of the genus. The fang-groove has a single row of 8 stout conical teeth.

A single female of this Spider was taken by Dr. W. Ince in Trinidad. When more specimens of both sexes are available for examination, it will be possible to give the differential characters better definition.

Fam. PISAURIDÆ.

Genus LYCOCTENUS F. Cambr.²,

Ann. Mag. Nat. Hist. ser. 6, xix. p. 95 (Jan. 1897).

LYCOCTENUS PALUSTRIS, sp. n. (Plate LIV. fig. 11.)

♂. Total length 30 mm. Carap. 14×10. Legs: i. 63—ii. 56—iii. 50—iv. 63. Pat.+tib. i. 19—iv. 18.

Colour. Carapace deep mahogany-brown, with a broad margin of yellow-white pubescence. Abdomen deep olive-brown, clothed with short yellow-grey pubescence. Legs brown, clothed with short yellow-grey pubescence and short brown hairs.

Structure. The general characters are the same as in other species of the genus. The unca of the palpal organs is, however, much broader across the middle, strongly projecting in a rounded

¹ Die Arachniden, ix. p. 67, fig. 733, ♂.

² NOTE.—M. Simon, Hist. Nat. Ar. i. 2, p. 300, regards *Lycotenus* F. Cambr. as a synonym of *Ancylometes* Bert. I do not know whether M. Simon has seen Bertkau's type; but since this latter author quotes the number of pairs of spines beneath tibia i. and ii. as 5, one cannot, on Bertkau's description alone, be satisfied as to their identity. I think it is very likely they are the same, but I have no satisfactory proof of it yet.

angle forwards, while its disc is excavated in a longitudinal oval groove (Pl. LIV. fig. 11). Otherwise the palpal organs very much resemble those of *L. columbianus* F. Cambr. The Spider from Trinidad is, however, very much larger, while the patella and tibia of the first pair of legs are together shorter than those of the fourth pair. In *columbianus* they are equal.

A single adult male was sent by Dr. Ince, from Trinidad.

EXPLANATION OF PLATE LIV.

- Fig. 1. *Actinopus hartii* Pocock, p. 893. Adult male. Palpal bulb, side view.
 2. *Psalmopæus cambridgii* Pocock, p. 896. Adult male. Right mandible.
 3. " " " Coxa of pedipalp, showing "lyra."
 4. " " " Lyra enlarged.
 5. " " " Palpal bulb from the outside.
 6. " " " Palpal bulb from in front.
 7. " " " The two spurs shown on the tibiæ of first pair of legs.
 8. *Hapalopus incei*, sp. n., p. 894. Tibia of the right leg of the first pair, showing the two spurs.
 9. " " " Palpal bulb from the outside.
 10. " " " Palpal bulb from in front.
 11. *Lycotenus palustris*, sp. n., p. 899. Unca of palpal bulb.
 12. *Hapalopus incei*, p. 894. Sectional sketch of the burrow based on notes sent by Mr. Potter.

4. On the Moulting of the King Penguin (*Aptenodytes pennanti*) in the Society's Gardens. By W. E. DE WINTON, F.Z.S.

[Received October 28, 1898.]

A King Penguin living in the Society's Gardens has lately gone safely through the moult; this moult has been the only one made during the 16 months that this specimen has lived in the Gardens. Two specimens, ♂ & ♀, were purchased on June 23rd, 1897. The female died early in October, from the heat at the end of the summer of last year, before getting acclimatized.

The only opportunity of observing the moult of any member of this order of birds which has been taken advantage of and the facts published is that of the smaller and very widely different species *Spheniscus humboldti* as recorded by the late Mr. A. D. Bartlett in the P. Z. S. 1879, p. 6; and as that was a case of moult from the plumage of the young bird to that of the adult, and the present instance is a simple moult of the adult bird, the facts are thought worth recording.

It is to be regretted that careful notes of the changes were not made daily and more accurate dates noted; but not being primarily interested in ornithology I thought that someone else would have been watching the change, and so can only very roughly describe some of the most striking features of the moult.



Pickard-Cambridge, F. O. 1898. "On new species of spiders from Trinidad, West Indies." *Proceedings of the Zoological Society of London* 1898, 890–900.

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