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XXXVIII.—*Description of Six supposed new species of Parasites.*

By HENRY DENNY, Corresponding Member of the Academy of Natural Sciences of Philadelphia, &c.

AMONGST the Parasites collected by myself, or forwarded by scientific friends to assist in my investigation of the *Anoplura*, several specimens occurred which did not belong to the above class, and therefore did not immediately claim my attention. Upon examining these however subsequently, and suspecting that some were undescribed and probably new to science, I felt that a short notice of them was required at my hands. I therefore transmit a brief description, with figures of *six species*, &c. for publication in the 'Annals of Natural History,' under a conviction that should any of them eventually prove recognized species, *recent* figures of the same may not be wholly useless. These consist of four species of *Trachean Arachnida*, one of the family *Hippoboscidae*, and one of the order *Aphaniptera*, which may be characterized thus:—

Class ARACHNIDA.

Order TRACHEARIE.

Tribe ACARIDES.

Genus IXODES.

1. *Ixodes bimaculatus* (Denny). Subovatus, depressus; capite, thorace, pedibusque pallide stramineis; abdomine coccineo, rugoso, punctato, cum maculis duabus magnis, suborbicularibus, aurantiacis, eminentibus; pedibus interne hepaticis.—Long. 4 lin. Pl. XVII. fig. 1.

Hab. *Hippopotamus amphibius*, Southern Africa.

Subovate and depressed. Thorax and legs pale straw-colour above, slightly pubescent with a few scattered black punctures. Apex and lateral margin of the palpi dull crimson. Head with two black subtriangular spots in the centre. Thorax very distinct, subcordate, with two black, somewhat undulated, impressed longitudinal lines from the anterior margin to the base, and an irregular diagonal spot from the humeral portion of the lateral margin on each side. Abdomen dull crimson, rugose, punctured, with seven obscurely defined longitudinal furrows, and two large, nearly circular, slightly elevated orange-coloured spots, sinuated on the inner margin. Legs thick and strong, the last joint and the under surface of the remainder clouded with deep liver-colour.

Communicated by A. Melly, Esq., of Liverpool.

DeGeer figures and describes a species of *Ixodes* (*Acarus sylvaticus*) obtained at the Cape of Good Hope by Sparrman from a land tortoise, which agrees with this in many respects as to colour; but from his silence as regards the very characteristic orange

spots on the abdomen, together with the legs of his species being a *dull brown*, while those of the above differ so materially on this point, I consider myself justified in characterizing it as a new species.

2. *Ixodes Hippopotamensis* (Denny). Subovatus, subconvexus, pallide stramineus, lævis, cum lineis nigris, submarmoratis seu reticulatis; pedibus flavo-albis, interne hepaticis.—Long. 3 lin. Pl. XVII. fig. 2.

Hab. Hippopotamus amphibius, South Africa.

Subovate and rather convex, pale straw-yellow, smooth, with a few scattered impressed punctures. Thorax indistinctly defined, with a bifurcated black line on each side, extending from the insertion of the occiput to the posterior margin, where they become nearly united. Abdomen reticulated by a number of black markings, which form a series of irregular blotches round the lateral margin, and one large patch in the centre. Legs paler than the body, thick, strong and hairy; the inferior margin obscurely toothed; under surface deep liver-red.

Communicated by A. Melly, Esq.

3. *Ixodes Rhinocerinus* (Denny). Ovatus, subconvexus, cum puncturis aliquot magnis; nigris, lævibus, et maculis multis, magnis, aurantiacis; pedibus aurantiacis, cum annulis obscure rufis, superficie interna irregulariter dentata.—Long. 3½ lin. Pl. XVII. fig. 3.

Hab. Rhinoceros bicornis, South Africa.

Ovate, somewhat convex, black and smooth, with a few large punctures scattered over the surface. Head and palpi orange-yellow, the former darker at the occiput. Thorax obscurely defined, subcordate, with a broad interrupted orange margin. Abdomen with *six* large irregular orange blotches in the centre, and a series of smaller ones round the lateral margin, divided by *eleven* impressed lines posteriorly, and united by a semicircular transverse one. Legs orange-yellow, thick and strong, the last joint and the basal portion of the remainder with a deep red annulus; the inferior margin acutely but irregularly toothed and armed with stiff hairs.

Communicated by A. Melly, Esq.

DeGeer describes and figures an *Ixodes* from the Rhinoceros (*Acarus Rhinocerotis*), which in certain points resembles the above so nearly, that I felt some doubts as to whether they might not be the same species at different ages, or extreme varieties. But he says, "*Subrotundus, planus, fuscus, maculis testaceis fusco-punctatis.*" Again, "*Les huit pattes sont du même brun obscure que le corps.*" Now in the first place our insect is *not fuscous*, but *black*; and secondly, the feet are not of the same colour as the

body; and lastly, the very prominent character of the strongly dentate inferior margin of the legs is not alluded to, which therefore appears to favour my supposition that the present species is not the *Rhinocerotis* found by Sparrman at the Cape, but a distinct and undescribed *Ixodes* also infesting the *Rhinoceros bicornis*. It is however by no means improbable that the *Rhinocerotis* was obtained from a different species of Rhinoceros, as at the period when Sparrman visited Africa, and long afterwards, all the individuals which might have been seen were confounded under the appellation of *Rhinoceros Africanus*; since which, owing to the discoveries of Burchell and Smith, two other well-marked species have been found inhabiting the same continent, either of which might have occurred to the Doctor while exploring the interior, and supplied the specimen described by DeGeer.

This and the two preceding species formed part of the collection obtained in South Africa for the Earl of Derby by Mr. Burke, and which his lordship was kind enough to apprise me of under an impression they were belonging to the peculiar family of Parasites I am at present investigating.

4. *Ixodes Hydrosauri* (Denny). Orbicularis, planus, subpubescens, fuscus, thorace piceo; pedibus hepaticis, cum albis annulis.— Long. 3 lin. Pl. XVII. fig. 4.

Hab. *Hydrosaurus Gouldii*? Van Diemen's Land.

Orbicular and depressed, obscure, finely punctured and pubescent. Head and palpi dull red. Haustellum ochraceous. Thorax distinct, subtriangular, pitchy; the anterior margin pale red. Abdomen flat, dull brown, with three or four dark, slightly sunk blotches on each side; posterior margin somewhat crenate, with a series of darker spots alternating with impressed lines. Legs thick, liver-coloured, each joint, the last excepted, terminated by a white band.

Communicated by Mr. Gould.

This species was obtained from one of the large lizards of Van Diemen's Land, known to the colonists by the general name of Guana (most probably the *Hydrosaurus Gouldii* of Mr. Gray), by the above talented and zealous zoologist, and given to me on his return from investigating the ornithology of Australia.

Class INSECTA.

Order OMALOPTERA.

Family HIPPOBOSCIDÆ.

Genus LIPOPTENA.

5. *Lipoptena Pteropi* (Denny). Ochraceus, nitidus, pubescens; oculis maximis, cinereo-cæsus; thorace cum angulis lateralibus

posterioribus et linea centrali castaneis; pedibus longis, crassis; unguibus nigris.—Long. 1 lin. Pl. XVII. fig 5.

Hab. Pteropus edulis, East Indies.

Dull ochraceous, shining and pubescent. Head flat, transverse, as wide as the thorax. Eyes very large, ash-gray. Thorax transverse, with a line in the centre, and the posterior portion chestnut; the base with four large punctures and a series of bristles. Scutellum prominent and semicircular. Wings very small, rudimentary, apparently with only three simple costæ? Abdomen subovate, somewhat pedunculate, flat and coriaceous, with faint indications of five segments? Legs long, thick, pale ochraceous; the apex of the femora with a fuscous spot; posterior pair slightly notched near the extremity. Claws divaricate, black, finely serrated beneath. Pulvilli membranous, ciliated, with a feathered bristle beneath.

I much regret not being able to give more details in illustration of the anatomy of this curious Parasite, which I have been precluded from doing, not only from the small size and mutilated state of the specimen, but from its being the only one in my possession: of the structure of its antennæ and halteres I know nothing, these organs having been destroyed? and from the very rudimentary and obscure nature of the wings, I cannot be positive that my figure is correct. I obtained my example from beneath the wing of *Pteropus edulis* (Black Roussette), commonly called, though inaccurately, the Vampire.

Order APHANOPTERA.

Family PULICIDÆ.

Genus PULEX.

6. *Pulex Echidnæ* (Lewis). Castaneus, splendens; margine singulorum segmentorum totius corporis superiori cum setis nigris pectinato; pedibus crassis, aureo-flavis, interne castaneis, cum tarsis castaneis.—Long. 2 lin. Pl. XVII. fig. 6.

Hab. Echidna Hystrix, Van Diemen's Land.

Bright chestnut, shining and shagreened. Head nutant. Eyes prominent, silvery white. Antennæ distinct; capitate, consisting of four joints; the first somewhat cup-shaped, produced on one side; second very small, subglobular; third short, subconical; fourth very large, oval, pale yellow, marked with transverse striæ; situated in the temporal sinus. Thorax long, conical, *apparently?* consisting of five segments*. The first three, composing the prothorax,

* I have used this expression in consequence of authors differing as to the number of segments in the thorax of *Pulex*. Mr. Curtis says, under the genus *Ceratophyllus*, "Thorax composed of several segments;" Mr. Westwood, "Thorax composed of three short segments," vol. ii. p. 491.

narrow and unequal; the fourth and fifth, forming the mesothorax and metathorax, considerably enlarged, the lower portion of each prolonged backwards into a tongue-like process and thickly punctured. Alary plates moderate; sutural margins of the thorax and abdomen ciliated above and below with large black bristles. Abdomen somewhat truncate posteriorly. Legs thick, orange-yellow; under surface of the femora, apex of the tibiæ and tarsi deep chestnut, densely armed with pitchy spines. Trochanters very large, flat and securiform; anterior femora somewhat sigmoid.

The specimen of this *Pulex* in my possession was given to me by Mr. Gould, who found it on the *Echidna Hystrix* (Australian Porcupine) in Van Diemen's Land. Presuming it to be an undescribed species, I proposed for it the specific name of *Echidnæ*. Several months subsequently however I found, on reference to Mr. Westwood's invaluable storehouse of entomology (the 'Modern Classification of Insects'), that he had also a specimen of *Pulex* from the same quadruped, sent to him from the same locality by Mr. R. H. Lewis, with the MS. name of *Pulex Echidnæ*. As there is every probability that the two insects are of the same species, I make no hesitation in quoting Mr. Lewis as the original identifier, his specimen having doubtless been examined and named before mine. This species resembles in some points the *Pulex Gigas* of Kirby (Faun. Bor. Amer. p. 318. pl. 7. fig. 9.), and is of nearly the same magnitude; and although it is unknown from what animal Dr. Richardson obtained it, yet, as the localities of the two are so wide asunder and the zoology of the countries so different, I feel justified in considering them specifically distinct.

The specific character of *Gigas* is as follows:—" *Ovatus, luteo-testaceus, nigro-setosus; thoracis segmento primo apice setis pectinato; secundi basi nigra; antennis brevissimis, conicis; femoribus compressis, subovatis latissimis.*"

EXPLANATION OF PLATE XVII.

- Fig. 1. *Ixodes bimaculatus*.
 Fig. 2. ——— *Hippopotamensis*.
 Fig. 3. ——— *Rhinocerinus*: 3 a, under view of the palpi and haustellum; 3 b, posterior leg of ditto.
 Fig. 4. ——— *Hydrosauri*: 4 a, upper view of the palpi, &c.; 4 b, posterior leg of ditto.
 Fig. 5. *Lipoptena Pteropi*: 5 a, anterior leg; 5 b, upper view of the tarsus; 5 c, penultimate joint of tarsus, showing the ungues, pulvillus and setæ; 5 d, single unguis much enlarged, showing the serrated under-side; 5 e, wing; 5 f, one of the eyes; 5 g, the pulvillus and setæ removed.
 Fig. 6. *Pulex Echidnæ*: 6 a, magnified view of the head with the antennæ in situ; 6 b, antennæ; 6 c, posterior leg; 6 d, anterior leg.