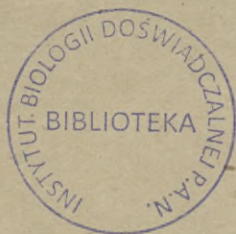


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LXVII.—Description of a new Species of Tree Trap-door Spider from Trinidad. By R. I. POCOCK.

[Plate XIX. figs. 1-3.]

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MR. J. H. HART has recently sent for determination to the British Museum a small series of insects and spiders from Trinidad. Three species of spiders were represented in the series: one of them is the well-known *Argiope argentata*; a second appears to be *Actinopus scalops* of Simon; the third, however, a species of *Pseudidiops*, appears to be undescribed. I propose therefore to name it in honour of its discoverer. It may be diagnosed as follows:—

*Pseudidiops Hartii*, sp. n.

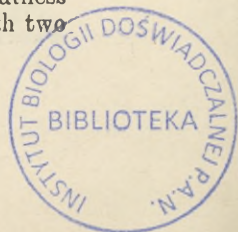
*Colour*.—Carapace olivaceo-piceous, with black posterolateral border and black ocular tubercles; abdomen purplish brown; legs mostly testaceous, but the whole of the patella and the distal end of the tibia black; tarsi reddish black; sternum and coxæ flavous, maxillæ and labium olivaceo-castaneous.

*Carapace* smooth, high, the posterior portion sloping upwards to the deep crescentic fovea; the area immediately in front of this fovea abruptly elevated, deeply longitudinally sulcate, and furnished on each side with a single large setiferous puncture; the area of the carapace between these punctures and the anterior border nearly flat, but bearing the two elevated ocular tubercles, the area between the two tubercles only a little larger than the diameter of the anterior eyes of the posterior tubercle, which is furnished with a strong seta between these eyes.

*Mandibles* weak, smooth above, furnished in front with long stiff setæ, the inner angle above the base of the fang produced into a short spicular prominence; fangs short but robust.

*Labium* separated from the sternum by a deep depression, narrowed in front, its distal border rounded, beset with long stiff setæ and armed with a transverse row of four short conical spines, behind which are two less conspicuous but similar spines.

*Maxillæ* covered with stout conical spines. The femoral segment of the palp furnished internally with a few irregularly arranged long setæ, which distally increase in stoutness and become spiniform; the *patella* armed internally with two





long spines and furnished with a distinct tubercle externally ; the *tibia* hairy beneath, but armed externally and internally with about two rows of strong spines ; the *tarsus* similarly armed, the claw with a large basal tooth, which is itself also armed. The legs of the anterior pair armed like the palpi, except that the inner surfaces of the femur and patella are not armed with either spines or spiniform hairs and the anterior spines on the *tibia* are fewer. The second leg is, like the first, stout, the spines on the *tibia* still more reduced, those on the anterior surface becoming shorter and those on the posterior surface setiform and fewer. In the third leg there are a few small spines interspersed amongst the hairs on the anterior aspect of the patella and on the anterior and posterior aspects of the *tibia* ; a few, too, only remain upon the proximal segment of the *tarsus*, which is, however, armed beneath with two strong long spurs. In the fourth leg the patella is armed with a few short spines in front and one behind ; the *tibia* is furnished with setiform spines beneath and the proximal tarsal segment with a few long spines beneath. The claws of all the legs are armed with a large basal tooth, behind which, except in the posterior claws of the first and second leg, there is a second minute tooth.

The *abdomen* high and rounded. The anterior spinners shorter than the basal segment of the posterior, which are stout, three-jointed, and conical.

Length of carapace 6·5 millim., width 6 ; length of abdomen 8, width 6 ; length of maxillipede 12·8, of first leg 15·2, of second and third 13·8, of fourth 20.

Of this interesting genus *Pseudidiops*, with which *Dendricon* of Cambridge is synonymous, two species have been described \*, and these are very probably identical.

Simon's original specimens were from Cayenne, and he has subsequently obtained the species from Venezuela. Unfortunately his description is very brief and is not accompanied by figures ; so it is only possible to point out that this form from Trinidad appears to differ from his *opifex* in having the legs flavous and ringed with black. By the same character it may be recognized from the British-Museum example from Bahia, which Mr. Cambridge has described as *Dendricon rastratum* in the Proc. Zool. Soc. 1890, p. 623.

\* *Pseudidiops opifex*, Simon, Ann. Soc. Ent. Fr. (6) ix. p. 215 (1889).

*Dendricon rastratum*, Cambridge, Proc. Zool. Soc. 1889, p. 250.

(The description of *Pseudidiops* appeared on Sept. 11th, that of *Dendricon* on Oct. 1st. The former therefore has the priority.)

But it further differs from this last-named specimen in having the cephalothorax less elevated, a smaller distance between the two ocular tubercles, the eyes on the posterior tubercle set more closely together, and in possessing fewer spines on the labium.

The nest of this species, which was sent with the specimen, appears to resemble that of *P. rastratus* from Bahia. It is a short tube permanently closed at the bottom, with a hinged door at the entrance formed of closely woven silk threads, and perfectly smooth inside. The length of the tube from the hinge-margin to the bottom is only about twice the greatest diameter of the aperture. The surface by which it was attached to the tree-trunk is tolerably flat; the free surface, on the contrary, is strongly convex and thickly covered, as also is the door, with particles of bark. The shape of the cavity corresponds to that of the outside and of the door. The door, which is slender and with upturned edges, is wider one way than the other, *i. e.* its width from the hinge to the margin opposite to it is less than the width taken along a line at right angles to this measurement. It opens outwards and closes by the elasticity of its hinge. When closed the plane of its outer surface meets that of the trunk of the tree at an angle of about  $45^{\circ}$ .

*Note 1.*—In the nest of *Actinopus scalops*, which Mr. Hart sent with the specimens of this species, the hinge of the door is strengthened and protected by thick tough layers of greenish silk, so that the area above the hinge projects far above the rest of the surface of the door (Pl. XIX. fig. 3).

*Note 2.*—Mr. Hart forwarded with the specimens of *Argiope argentata* examples of the cocoons of that species. These cocoons show an interesting variation in colouring, being either bright yellow or green on both sides or green on one side and yellow on the other.

#### EXPLANATION OF PLATE XIX. FIGS. 1-3.

- Fig. 1.* *Pseudidiops Hartii*, sp. n., nat. size. 1 a. Lateral view of carapace. 1 b. Lateral view of upper part of carapace, to show arrangement of eyes and disposition of setæ. 1 c. Labium. 1 d. *Pseudidiops rastratus* (Camb.), for comparison with fig. 1 b.
- Fig. 2.* Nest of *Pseudidiops Hartii*, sp. n.
- Fig. 3.* Nest of *Actinopus scalops*, Simon.

## BIBLIOGRAPHICAL NOTICE.

*The Fauna of British India, including Ceylon and Burma.—Moths.*  
 Vol. I. By G. F. HAMPSON. Edited by W. T. BLANFORD.  
 Royal 8vo. With numerous Illustrations and 527 pages of  
 letterpress. Published under the authority of the Secretary of  
 State for India in Council. London: Taylor and Francis, 1892.

WITHOUT doubt Mr. Hampson's work is one of the most important contributions to entomological literature which has hitherto appeared—valuable alike to the student and collector of Indian moths, to whom it will be a priceless boon; to the cabinet worker who has to deal with the Heterocera of the world it will be a necessary text-book.

The classification of the families of Butterflies was studied in 1864 by the late Mr. H. W. Bates, and with such satisfactory results that his arrangement commended itself to all lepidopterists who took the trouble to test its accuracy; indeed, Bates's classification, with very slight modifications, is generally adopted at the present day. On the other hand, to form a key to the many families of Moths seemed such a stupendous task, that few men ventured to attempt it. The arrangements proposed by Messrs. Boisduval and Guenée were generally followed, and the blunders of these pioneers were copied and multiplied by their successors until the chaos into which the Heterocera were brought looked almost hopeless.

At length the study of the Tineina by Stainton and others and of the Noctuæ and Pyrales by Lederer began to throw a little light upon the obscurity; but entomologists still needed a guide to point out how, by the use of a simple pocket-lens and a little benzine, to decide at once whether a moth was a Geometer, a Noctuid, a Pyrale, and so forth.

In his 'Vlinders van Nederland' Heer P. C. T. Snellen eventually produced an admirable key to the families and genera of European Moths—a work unfortunately overlooked by most students of Exotic Lepidoptera; the confusion which therefore existed in public and private collections became year by year more confounded. Happily Mr. Hampson, when seeking a basis on which to found a general classification, discovered Snellen's key, and upon this, with slight modifications and many additions, he formed his classification of the Moths of the World.

In his Introduction Mr. Hampson has for the first time pointed out a character by which Moths can be distinguished from Butterflies, namely—all which resemble Butterflies in the possession of clubbed or dilated antennæ, also possess a frenulum, a character invariably wanting in the so-called Rhopalocera.

The descriptive matter and illustrations in the first volume of the Moths of India leave nothing to be desired, the former being terse and to the point, whilst in every genus one species is admirably figured, usually with accurate structural details, and in many instances a typical larva is represented. When absolutely necessary the



synonymy of a species is given, but otherwise a reference to Cotes and Swinhoe's Catalogue of the Moths of India is substituted.

Touching the sinking of many described forms to the rank of synonyms, doubtless considerable differences of opinion will exist amongst lepidopterists; Mr. Hampson has used his private judgment in the matter, and, as an experienced collector of Indian Moths, his opinion must be allowed to have some weight. Without doubt the reduction of spurious species was much needed; but nevertheless the decision of no one man, however trustworthy, can be considered as final, until the life-history of many more species has been studied; because it is an acknowledged fact that, whereas some families of Moths are remarkable for their variability, others are almost as constant in all their characters.

A. G. BUTLER.

### MISCELLANEOUS.

*New Observations on the Affinities of the different Groups of Gastropods (Expeditions of the Yacht 'Hirondelle').* By M. E.-L. BOUVIER.

GASTROPODS are divided into two groups according as they are *unisexual* or *hermaphrodite*; the former (Prosobranchia) are further characterized by their decussating visceral commissure in the form of a figure of eight, while the latter (Opisthobranchia, Pulmonata, Pteropoda) are distinguished by their visceral commissure being more or less free from torsion. After a previous study\* I had succeeded in partially removing the abnormal hiatus which an incomplete investigation had allowed to exist between these two groups, which I remained convinced must formerly have been united by a transitional form. If this form still existed it could only be found among the oldest Opisthobranchia, the Actæonidæ, which made their appearance in the Carboniferous period, and which are represented at the present time by the genus *Actæon*, of Triassic origin. Investigations which I have made upon specimens of *Actæon solidulus*, kindly handed over to me by M. Jousseume, show that this Gastropod is, as a matter of fact, an ideal transitional form not only between the Prosobranchia and the Opisthobranchia, but also between the latter and the Pulmonata. As I have already published a succinct *résumé* of the organization and affinities of *Actæon* †, I shall here confine myself to an exposition of the general considerations to which the organization of this animal gives rise.

\* "Quelques observations anatomiques sur les Mollusques gastéropodes," Comptes rendus de la Société de Biologie, December 17, 1892.

† Société philomathique, séance du 24 décembre, 1892, and Société de Biologie, séance du 7 janvier, 1893.

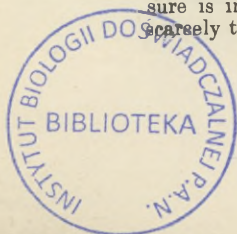
The nervous system of *Actæon*\* is decidedly chiastoneurous, like that of the Prosobranchia. The commissural ganglion on each side is fused with the corresponding cerebral ganglion. One of the branches of the visceral commissure starts from the left cerebro-commissural ganglion, travels obliquely from left to right and from front to rear, passing beneath the long buccal mass, and ends in the subintestinal ganglion, which is situated to the right close to the body-wall; the other branch is detached from the right cerebro-commissural ganglion, travels from right to left and from front to rear above the buccal mass, and ends in the supra-intestinal ganglion. Starting from this ganglion, which is situated upon the body-wall to the left, the commissural branch passes backwards, and, shortly before reaching the anus, inclines to the right above the œsophagus, and terminates in the visceral ganglion, which lies between the latter and the oviduct. In this same ganglion likewise terminates the prolongation of the subintestinal branch.

The supra-intestinal ganglion innervates the gill and the left portion of the mantle; the subintestinal ganglion emits a nerve which proceeds to the right portion of the latter organ. The innervation of the mantle is, however, a little further complicated, owing to the presence of two small accessory ganglia, which we may term *secondary pallial ganglia*, and which are the more important since they will enable the chiastoneurous nervous system of *Actæon* to transform itself by degrees into an orthoneurous system. The first of these ganglia is situated upon the subintestinal branch, midway between the left cerebro-commissural ganglion and the subintestinal ganglion; it innervates the left portion of the mantle: the second is found upon the supra-intestinal branch, in the immediate neighbourhood of the right cerebro-commissural ganglion; it innervates the right portion of the mantle. Thus the left portion of the mantle receives at the same time the nerves of the supra-intestinal ganglion and of the left secondary pallial ganglion, while the right portion is innervated by the subintestinal ganglion and the right secondary pallial ganglion.

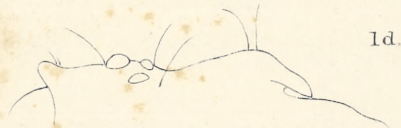
From the foregoing it is clear that *Actæon* is directly connected with the Prosobranchia, and, if we take into consideration the characters of the bipectinated gill, with the diotocardiac division of the latter. We now have to consider by what process it has been possible for them to give rise to orthoneurous descendants, that is to say to the other Opisthobranchia and to the Pulmonata.

It has been shown by Bütschli that it would be possible to derive the Gastropoda from a dibranchiate primitive form, the two gills of which would have been situated symmetrically *behind*, the one to the right, the other to the left of the anus; this primitive form had

\* Our knowledge of the nervous system of *Actæon* is based upon a figure by M. Pelseneer ('Challenger' Pteropoda, pl. ii. fig. 11). The cerebral and pedal centres are distinctly shown, but the visceral commissure is incompletely figured; however, it is merely a repetition of the scarcely twisted commissure of the normal Tectibranchia.







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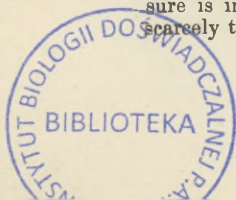
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