

greater wing-coverts, primaries, secondaries, tertiaries, the tips of the two central and the whole of the lateral tail-feathers, which are of a rich chocolate-brown; irides yellow; naked skin of the face and chin in dead specimen dull bluish black; legs greenish blue.

Total length, 29 inches; bill, 5; wing,  $16\frac{1}{2}$ ; tail,  $8\frac{1}{2}$ ; tarsi,  $2\frac{1}{2}$ .

*Hab.* North and north-east coasts of Australia.

*Remark.*—A very robust and powerful species.

The following Note on the Spermatozoa of the Polar Bear, by George Gulliver, Esq., F.R.S., was read:—

The question of the true nature of these curious bodies is as interesting as it is obscure. Whether they be independent animalcules or merely free and floating cilia has never been clearly proved.

Professor Valentin\*, indeed, described an amount of organization in the spermatozoa of a Bear, quite sufficient, if confirmed, to prove that they are really distinct beings. Therefore I took an opportunity of obtaining them for examination from the Polar Bear which died this morning in the Society's menagerie. The animal was a very large adult, in good condition; his testes well-developed, containing in the seminal tubes plenty of cells and immature spermatozoa, and an abundance of them perfectly formed in the vas deferens. These were carefully examined. They presented none of the marks of mouth, anus and internal vesicles depicted by Professor Valentin. In short, the spermatozoa of the Polar Bear were similar in all respects to those of numerous other Mammalia, as may be seen by comparing my drawings, now exhibited to the Society, of the spermatozoa of the following animals, viz. the Polar Bear (*Ursus maritimus*, Linn.), the Stoat (*Mustela Erminea*, Linn.), the Indian Badger (*Arctonyx collaris*, F. Cuv.), the Dromedary (*Camelus Dromedarius*, Linn.), and the Camel (*Camelus Bactrianus*, Auct.). I gave a notice of the spermatozoa of the two last animals in the Proc. of this Society, July 26, 1842, p. 101, and April 11, 1843, p. 50.

#### ENTOMOLOGICAL SOCIETY.

January 6th, 1845.—G. Newport, Esq., President, in the Chair.

Mr. F. Bond exhibited a specimen of *Damophila Trifolii*, together with the portable case formed by its larva, thus proving its affinity to the genus *Porrectaria*.

February 3rd.—G. Newport, Esq., President, in the Chair.

Mr. A. White exhibited specimens of the Chinese *Rhomborhina resplendens* from Mr. Harrington's collection, *Goliathus (Compscephalus) Horsfieldianus* from Abyssinia, and drawings of some species of *Coccinella* brought from Asia Minor by Professor Forbes.

Mr. E. Doubleday exhibited a drawing of an aberrant species of *Diadema* resembling the genus *Acræa* in its colouring, especially *A. Zidora*, &c., and which he proposed to name *Diadema Boisduvalii*.

\* Wagner's Physiology, tr. by Dr. Willis, p. 228; 8vo, Lond. 1844.



March 3rd.—The Rev. F. W. Hope, F.R.S. (who had been elected President at the adjourned Anniversary Meeting), in the Chair.

The President nominated W. Spence, Thomas Marshall and W. W. Saunders, Esqrs., and Captain Parry, to act as Vice-Presidents.

Mr. Ingpen exhibited a remarkably fine specimen of amber, or gum anime, inclosing a small butterfly and numerous other insects.

The following papers were read:—

Extracts from a letter addressed by Captain Boyes to Mr. Westwood, containing notices of the habits of the *Termites* and other insects of India.

On carefully examining the nests of the white ants, the hissing noise described by some author (Smeathman?) was very distinctly heard by Captain Boyes, who ascertained that it was caused by the fluttering of the wings when the *Termes* is in its perfect state. At the commencement of the rainy season he several times prevented the exit of the perfect insects from their nest, which was in one of his room-walls, by pouring spirits of turpentine down the orifices into the nest, which kept them prisoners for several days; afterwards he plastered up the orifice with mortar, and after a month's confinement he allowed them to swarm, when however they all appeared to be of one sex (males), running over the tables in myriads, not a single specimen being observed to shed its wings, which is an operation voluntarily performed by the females when (as he supposes) they have paired, after which also the male sheds his wings.

Details, accompanied with coloured drawings, were also given of the transformations of a species of *Anthrenus*, and of several previously described species of *Sphinx*, *Bombyx*, and butterflies.

Extracts from a letter addressed to Mr. Westwood by R. Templeton, Esq., on the Bite of the *Scolopendra* in Ceylon.

Since his previous communication the author had seen two instances which show that the bites of *Scolopendræ* are not so innocent as he therein stated them to be. Lieut. M——, of strumous habit, was bitten by *Scolopendra pallipes* of his catalogue, on the forehead just above the root of the nose. He states that the pain was pungent for at least half an hour or longer; the forehead swelled very much, and his upper eyelids so much as to close the eyes completely. Cold lotion was applied and soon reduced the swelling, the two punctures only remaining. A gunner a few days afterwards was bitten by another of the same species on the dorsum of the foot, and he states that he was awakened by the pain; the *Scolopendra* was killed in his bed; two small punctures appeared, his foot near the marks swelled a little, but it disappeared totally in a few hours by poulticing. He states the pain also to have been as if chillie was rubbed into it, but it soon disappeared. His stomach and bowels were much out of order at the time—rather bilious or so.

Mr. Newport, in reference to the poisonous properties of the *Scolopendræ*, stated that *Lithobius* was also poisonous, at least to its own tribe, as observed by DeGeer; and that *Scolopendra* possesses a distinct secretory apparatus, provided with a poison-gland ending in



the mandibles, which are pierced for the purpose of emission of the poisonous fluid, which he had not however detected in *Lithobius*.

"A memoir on the Sectional Characters in the genus *Lucanus*." By J. O. Westwood, F.L.S.

After alluding to the prevalence of certain characters apparently of *immaterial* importance in the economy of insects, such as the number of joints in the antennæ, the number and position of the veins in the wings, &c., which nevertheless from their constancy afford excellent *artificial* points of distinction, the author alludes to the difficulties he had experienced in adopting sectional characters in the genus *Lucanus* of modern authors, now consisting of nearly 150 species; and to the employment of the number of spines on the outer edge of the middle and posterior tibiæ in the different sexes, which in many species he had observed to differ in this respect: whence the species form three primary groups:—

1. Those with two or three spines on the outside of the four hind tibiæ.

2. Those with only one spine in the middle of the four posterior tibiæ in both sexes.

3. Those in which the four posterior tibiæ are either destitute of spines, or have them furnished in the middle with one minute spine in the females alone.

The commencement of a memoir on the Life and Writings of Fabricius, translated (with additions) from the Danish. By the Rev. F. W. Hope.

Mr. A. White stated that an extended memoir on Fabricius has been published by the Baron Walckenaer in the 'Biographie Universelle.'

It was announced that the Address delivered by Mr. G. Newport at the adjourned Anniversary Meeting had been printed, and was ready for delivery to the Members.

Mr. E. Doubleday, in allusion to the noise made by the genus *Termes*, as stated in Captain Boyes's letter, mentioned that he had recently examined *Peridromia Feronia*, the butterfly described by Mr. C. Darwin, in his 'Tour,' as making a noise during flight like the rustling of parchment, and that he had detected a small membranous sac at the base of the fore-wings, with a structure along the subcostal nervure like an Archimedean screw or diaphragm in the tracheæ, especially at the dilated base of the wing.

April 7th.—The Rev. F. W. Hope, F.R.S., President, in the Chair.

Mr. Louis Fraser exhibited, on behalf of Mr. Balfour, a large case of Brazilian insects.

Mr. Westwood exhibited specimens of the singular chrysalis of the genus *Simulium*, which is found attached to the underside of the leaves of the watercress. Also a box containing a considerable number of specimens (belonging to more than twenty species) of *Pausida*, several of which (being new) had been forwarded to him by Captain Boyes. He also exhibited and opened at the meeting one of the large balls of earth formed by the Indian *Copris Molossus*, also



forwarded by Captain Boyes, the interior of which was found to contain a mass of dried dung, partially eaten, and a dead larva.

Mr. A. White exhibited drawings of various remarkable species of Crustacea, and read the description of a new genus of *Brachyura* somewhat allied in appearance to *Plagusia* of Latreille.

"The two divisions of *Plagusia* and *Grapsus* were formed by Latreille and Lamarck for the reception of certain Crabs, to which, from their square carapace and frequently perpendicular sides, Latreille gave the name of *Quadrilatères*. By De Haan the former of these genera has been divided into two, his *Philyra depressa* being founded on the *Cancer depressus* figured by Herbst, while he retains the name of *Plagusia* for those species of which the *Cancer squamosus* of Herbst (i. 260. t. 20. f. 113) is the type: of this last group he is acquainted with four species, two of which he describes. Professor Edwards only sectionally divides the genus *Plagusia*, and describes a new species from the Cape under the name of *Pl. tomentosa*. A careful perusal and comparison of the description given by Linnæus of his *Cancer Chabrus* (M. L. U. Reg. 438) has made me consider the *Plagusia tomentosa* synonymous with the Linnæan species; in which case *P. Chabrus* must stand in the list for *P. tomentosa*. Were there any just ground for separating the *Plagusia depressa* and *tomentosa*, the name *Philyra*, De Haan, ought to be changed, because already used for one of the genera of the Leucosiadous family of Crustacea.

"Without referring to the divisions of the marked group called *Grapsus*, I may here exhibit a sketch of a most remarkably formed genus from one of the Government voyages, somewhat allied to *Plagusia*, but differing much from it in appearance and even in family.

"TELMESSUS, White. Carapace depressed, somewhat pentagonal, the latero-anterior sides being the longest; the latero-posterior sides have two teeth in the middle, the latero-anterior sides have two broad dentated teeth between the external angle of orbit and the strongly developed, wide dentated division, the end of which forms one of the prominent angles of the carapace; the beak is very wide, and is formed of three broad teeth, the lateral forming the internal angle of orbit; the central is the widest, and by three notches at the end is divided into four small teeth; the inner antennæ are small, and not contained within a groove of front; the outer antennæ are very large, two basal joints thick and strong, and project beyond notch of front. The external pedipalps have the 3rd joint pointed at the end; it is oblong-ovate. Legs very long, compressed; tarsi longer than the joint before them, somewhat compressed.

"*Telmessus serratus*. Surface covered with small warts arranged in some places in lines, with hairs proceeding from the front of them.

"The specimen is a male."

The following papers were also read:—

"Description of a new genus of Lamellicorn Beetles apparently belonging to the family *Aphodiidæ*, from India." By J. O. Westwood, F.L.S.

CHÆTOPISTHES, Westw. Corpus oblongum, glabrum, dorso valde



*sulcato. Caput antice deflexum, fronte semicirculari marginato. Mandibulæ membranaceæ? Maxillæ corneæ, lobo apicali in unguiculum curvatum acutissimum producto. Antennæ 9-articulatæ. Prothorax fere rotundatus, antice truncatus, medio profunde sulcatus. Elytra apicibus setosis, singulo 4-sulcato. Pedes lati, compressi, tiliarum apicibus angulatis.*

*Chætopisthes fulvus*, Westw. *Fulvus, nitidus, capite et prothorace parum castaneis, hoc angulis posticis basique transverse impresso, impressionibus setulosis.* Long. corp. lin.  $1\frac{3}{4}$ .—Hab. in India Centrali. D. Boys.

A memoir on the characters and geographical distribution of those groups in nature which are considered as typical of families, by G. R. Waterhouse, Esq., was also read, which led to an extended discussion on the geography of insects.

## MISCELLANEOUS.

### *Apparatus of Hearing in Mollusks.* By Dr. FREY.

THE observations of Dr. Frey have been especially directed to the embryo of *Limnæus stagnalis*. The auricular vesicle is not perceptible in this mollusk until the singular rotatory movements of the embryo have ceased, and when the animal already crawls on the internal side of its shell. It is easy then to observe, on the anterior part of the body, the rudiments of the tentacles, the eyes with their pigment, and the tongue with its characteristic epithelium. On each side of the base of the tongue are found the auditory vesicles. They are spherical, their contour is simple, and their diameter from  $\frac{1}{60}$  to  $\frac{1}{56}$  of a line. At first they appear to contain in their interior only a transparent liquid, and are then, like the eye, unconnected with the central parts of the nervous system. There are soon developed in the liquid one or two small corpuscles, the form, the size, and the oscillatory movements of which are quite similar to those of the otolithes of the perfect animal; the vesicle which contains them presents on its margin a double contour, resulting probably from the thickness which the sides acquire. The size of the otolithes is from  $\frac{1}{450}$  to  $\frac{1}{300}$  of a line; their number slowly increases, and reaches to 20 when the *Limnæus* quits its shell; the diameter of the vesicle is, at this period,  $\frac{1}{40}$  of a line. By the side of the otolithes occur other smaller corpuscles, which often do not attain the size of  $\frac{1}{1000}$  of a line. The number of the otolithes and the size of the auditory vesicle continue afterwards to increase, at the same time that the animal increases; in the adult state, from 100 to 200 otolithes may be counted, and the diameter of the vesicle varies from  $\frac{1}{16}$  to  $\frac{1}{10}$  of a line.

The development of the auditory apparatus presents the same phenomena in *Physa*, *Paludina* and the terrestrial Gasteropods in general (*Helix*, *Limax*, &c.); the only differences are in the size of the parts.

In the bivalves, the apparatus of hearing only contains a single otolithe of large dimensions, which fills the cavity of the vesicle.





1846. "Entomological Society." *The Annals and magazine of natural history; zoology, botany, and geology* 17, 494–498.

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