shades of pale reddish brown, and measured 1·1 inch by 0·75. They were much darker than eggs of *Cyanopolius cooki* (from Mr. Seebohm's collection), also exhibited, and more pyriform in shape and not quite so large.

Prof. Bell exhibited some models illustrating the paper of Rathke on the development of the great blood-vessels in the Vertebrates, which he had lately obtained for the Anatomical Museum at King's College from Herr Englert of Heidelberg.

Mr. W. B. Tegetmeier, F.Z.S., exhibited a specimen of a Cat, which he referred to the Wild Cat (*Felis catus*), obtained in Donegal, and an example of a singular variety of the Black Grouse (*Tetrao tetrix*).

The following papers were read:—

1. On the Coxal Glands of *Mygale*. By Paul Pelseneer, D.Sc. (Communicated by Prof. Lankester, F.Z.S.)

[Received November 20, 1884.]

(Plate II.)

Two years ago Prof. Ray Lankester described and figured the position of an organ which he observed in the Scorpions, and which he called the "coxal gland"[1]. This gland, which, as he recognized, was not provided with an efferent duct, had been considered by Newport[2] and others as an appendage of the alimentary canal.

Prof. Lankester announced at the same time that he had ascertained the existence of this organ in transverse sections of the cephalothorax of a large *Mygale* (*Theraphosa*) from South America; and he identified these "coxal glands" with the "brick-red gland" described by Packard in *Limulus*[3].

More recently[4] he has again remarked on the existence of this organ in transverse sections of *Mygale* (*Cteniza*) *cœmentaria*, Latr.

But in no Araneid as yet has the form and position of the coxal gland been either described or figured from an anatomical point of view; and as far as *Mygale* in particular is concerned, none of the authors who have occupied themselves with the organization of the genus have mentioned any organ which can be considered to represent this gland[5].

[1] "The Coxal Gland of *Scorpio*," Proceedings of the Royal Society, June 1882.

[2] Philosophical Transactions, 1843, pl. xv. fig. 39.

[3] "On the Anatomy, Histology, and Embryology of *Limulus polyphemus*," Anniv. Mem. of the Boston Society of Nat. Hist 1880.

[4] "On the Skeleto-trophic Tissues and Coxal Glands of *Limulus*, *Scorpio*, and *Mygale*," Quart. Journ. of Micr. Sci. 1884.

[5] One can nevertheless recognize the presence of the coxal gland in a good

During the month of October 1884 a large living *Mygale* (*Theraphosa*), from South America, was placed by the Secretary of the Zoological Society of London at the disposal of Prof. Lankester, who had the kindness to entrust it to me in order that I might make out the position of the coxal gland. He gave me at the same time the series of transverse sections of the cephalothorax of *Mygale cœmentaria*, which he had made at an earlier date.

Having carefully studied the latter, I drew those which passed through the coxal gland, whenever this presented any change of shape, size, or position. One of the sections in which the gland presents its greatest development is shown in Plate II. fig. 1.

By the help of this series of drawings I was able to construct two diagrams, one of which showed the vertical projection (view from the side) of the gland, the other the horizontal projection (view from above). The latter is shown in Plate II. fig. 2.

In his recent paper [1] Prof. Lankester expressed the expectation, after examining sections of a South-American *Mygale*, that the coxal gland was not a simple ovoid glandular body, as in *Scorpio*, but that it was furnished with lobes corresponding to the coxæ of the cephalothoracic appendages, as in *Limulus*. The figure shows how well founded this anticipation was.

Taking these two diagrams as my guide, I looked for the coxal gland of the large *Mygale*, which was still pretty fresh, as it had only lain for a few days in 60 per-cent. alcohol, having been opened and washed with normal salt solution ($\frac{3}{4}$ per cent.) after being killed, and I was able to dissect it out completely.

The two glands, which are quite separate, are placed on each side of the cephalothorax, at the side of the entosternite (enthodère of Dugès), between the lower plate and the upward prolongations of it, to which latter they are intimately related in position, size, and form [2].

Surrounded by the connective tissue with large brown cells, which is found scattered through the entire body of *Mygale* [3], they extend as far as the edge of the lower plate of the entosternite, and have four lobes which correspond to the projections of this plate and at the same time to *the four last* appendages of the cephalothorax (ambulatory legs) [4].

The anterior and posterior lobes of the gland are the largest, and are parallel in direction to the long axis of the body. The second and

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section of *Mygale javanensis*, Walk., given by Liénard, "Recherches sur la structure de l'appareil digestif des Mygales et des Néphiles," fig. 2 A (Bull. Acad. Belg. 1878). The gland is shown under the upper part of the diverticulum of the stomach, between its bend and the entosternite.

[1] *Loc. cit.* p. 52.

[2] The relations between the entosternite and the coxal glands are the same in *Limulus* and *Scorpio* as in *Mygale*, as is easily seen from the works published on this subject.

[3] This tissue is analogous to that observed in *Scorpio* by Prof. Lankester (*loc. cit.* pl. xi. figs. 9–10), but the cells are larger, fewer in number, and more scattered.

[4] And not to the second, third, fourth, and fifth appendages, as in *Limulus*.

third lobes are shorter, thicker, and directed transversely; they extend slightly beyond the edges of the entosternite, and descend a little way into the coxæ of the fourth and fifth appendages.

In addition to these four coxal prolongations, the gland has again two internal projections near its middle third. These projections correspond to two slight excavations of the entosternite, between its lower plate and its upper prolongations. The latter pass above the gland between its coxal lobes, so that only the extremities of these can be seen between the prolongations of the entosternite.

The annular stomach, which rests on the entosternite, sends its lateral diverticula between these superior prolongations. The four posterior diverticulæ of the stomach [1] pass above the lobes of the coxal gland, are then bent back, and pass between the muscles of the corresponding coxæ, and extend below the cepalothoracic ganglion.

The colour of the gland is uniform, a brownish yellow not unlike that of the stomach and its lateral diverticula. Its appearance is coarsely cellular, showing distinctly the groups of cells of which it is made up.

I have nowhere seen any efferent duct, either passing to the exterior, or to any internal organ. The gland in *Mygale*, like that of the adult *Limulus* and *Scorpio*, is therefore a closed gland.

The shape and position of the coxal gland, as I have observed them in this large South-American *Mygale*, do not represent an isolated fact or one peculiar to this species alone. The diagram Plate II. fig. 2 shows in fact that in *Mygale cœmentaria*, and consequently in all the Tetrapneumones, the relations of the gland are almost completely identical [2].

When it is possible to study fresh specimens of *Limulus*, *Scorpio*, and *Mygale*, I think it would be useful to examine the contents of the gland from the chemical point of view. The result of such an examination would certainly help to determine the physiological function of this curious organ [3].

EXPLANATION OF PLATE II.

Fig. 1. Diagram of a transverse section of the cephalothorax of *Mygale cœmentaria*, Latr. (×9), passing through the coxæ of the third pair of ambulatory legs, and showing the relations of the right coxal gland (*a*) with the entosternite (*E*) and the digestive apparatus; *d*, lateral

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[1] In addition to the four large pairs of lateral diverticula, there is also a small anterior pair, at the base of the first lateral pair. (See Plate II. fig. 4.)

[2] The slight difference which is to be observed in the diagram fig. 2, on the inner side of the gland at the base of the fifth pair of appendages, was probably caused by the fact that this point corresponds to a certain number of imperfect sections. I think that for the rest, the diagram is sufficiently exact; and if one were to examine the coxal gland of *Mygale cœmentaria*, I think it would be found that its shape is very near to that indicated by the diagram.

[3] P.S.—March 20th, 1885. After the reading of this paper, I was able to consult Blanchard's "Organisation du règne animal." In the fig. 2, pl. xvi. (Arachnides) of this work, one can recognize the coxal gland in the so-called "glande stomacale." But the corresponding text, unfortunately, does not exist.—P. P.

diverticula of the annular stomach; *e*, annular stomach; *S*, suctorial organ; *m*, nerves of the fourth pair of ambulatory legs; *n*, abdominal nerve.

Fig. 2. Diagram of the left part of the cephalothorax of *Mygale cœmentaria*, Latr., to show the horizontal projection of the coxal gland; ×6½. *a*, The coxal gland. 1, Cheliferæ. 2, Chelæ. 3–6, The four last pairs of cephalothoracic appendages. A. Abdomen.

3. The same specimen as in fig. 4. To the left hand the upper prolongations (*p*) of the entosternite show only the coxal lobes (*a*) of the gland; on the right, the same prolongations and the lateral diverticula (*d*) of the annular stomach hide all but very small parts (*a*) of the gland. *S*. Suctorial organ.

4. The left coxal gland and the entosternite of *Mygale*, sp., from South America, *in situ*, dorsal view; ×2½. The superior prolongations of the entosternite have been removed along the line *ii*, to show, on the right side, the coxal gland in its entirety, and on the right side the lower plate of the entosternite, which on the left is hidden by the gland. *a*, The coxal gland; *b*, its coxal lobes; *c*, its internal projections. *E*, The entosternite. 3–6, The coxæ of the ambulatory legs. *A.B*, Line showing the direction of the section in fig. 1.

2. On the Myology of the Water-Opossum. By E. J. Sidebotham, B.A., late Assistant Demonstrator of Anatomy, Cambridge.

[Received November 20, 1884.]

Through the great kindness of Professor Macalister I have had the opportunity of making a careful dissection of the muscular system of the Water-Opossum (*Chironectes variegatus*).

The specimen, which was that of a young male, was a spirit one, and the muscles were in a very good state of preservation.

When I received it the skin and abdominal viscera had been removed, some of the superficial muscles were considerably damaged, and most of the terminal phalanges had disappeared.

It had the following dimensions :—

	centim.
Extreme length	59
Length of tail (measured from sacro-iliac synchondrosis)	37·4
Length of humerus	4·1
Length of femur	5
Length of tarsus (terminal phalanx having disappeared)	6·1

Through the courtesy of Professor Flower I was enabled to measure the five specimens of this animal in the National Collection at South Kensington.

The four stuffed specimens varied in length from 68·7 cm. to 41·5 cm., the tarsus varying from 6·7 cm. to 3·9 cm.

The skin of the remaining specimen measured 67·6 cm. in length, the femur 5·6 cm., the humerus 4·7 cm., and the tarsus 5·9 cm.

Muscles of Anterior Extremity.

Rhomboideus.—Indivisible, arising from inner two thirds of occipital crest, from spines of cervical and first five dorsal vertebræ.