projecting processes as in the fully ossified coracoid of *Cryptoclidus*. The thin inner posterior portion of the bone is frequently broken away, and the remaining portion, consisting of the thickened anterior and external borders, has then the form shown by Prof. Seeley in his figure of the coracoids of *Murænosaurus Manselli* *.

The posterior convex margin in the present specimen bears rough grooved surface for cartilage, showing that growth was still in progress in this direction. Anteriorly the coracoids are prolonged forwards in the middle line in short pointed processes, which extend towards the backward processes of the scapulæ, but do not reach them; both bones, however, bear surfaces for cartilage, and were probably already united by a bar of that substance.

The dimensions of the pectoral girdle are :—

	centim.
Extreme length from anterior end of scapulæ to hinder border of coracoids	59
Width across coracoids in a straight line between the hinder edges of the glenoid facets	38
Extreme length of coracoids	40
Width of coracoids at narrowest point	27

The humerus (*h*) figured measures about 31 centim. long; the smallest circumference of its shaft is 21 centim., and the width of its expanded distal extremity is 19 centim.

The Pelvic Girdle. (Figs. 2, 3.)

The pelvis represented in figs. 2 and 3 gives a clearer idea of the structure of that portion of the Plesiosaurian skeleton than any other specimen or figure with which I am acquainted.

The *pubis* (*pu*) is a broad nearly flat plate of bone, very thin except near the median border and the articular surfaces for the ischium and femur; the posterior margin is also somewhat thickened. The width of the bone from the antero-external to the antero-internal angle is 28 centim., the length from the ischial surface to the anterior border 25·5 centim. The length of the acetabular surface is about 8 and of the ischial surface 4 centim. In the specimen figured the left pubis has been restored in plaster. The two pubes seem to have made an angle of about 120° with one another; they were still separated in the middle line by a pad of cartilage, which was widest in front and behind; whether the posterior portion of this cartilage extended back to join that lying between the

* Quart. Journ. Geol. Soc. vol. xxx. (1874) p. 437, fig. 2.

ischia, thus enclosing an *obturator foramen* on either side, cannot be determined, but it probably did so.

The *ischia* (*is*) are hatchet-shaped bones, the upper thickened ends of which bear three articular surfaces—an anterior one

Fig. 2.

Pelvic girdle of *Murænosaurus* from above. *pu*, pubis; *is*, ischium; *il*, ilium; *f*, femur. About $\frac{1}{11}$ nat. size.

looking forwards for union with the pubes, a middle, looking outwards, forming the median portion of the acetabulum, and a posterior, looking upwards and backwards, for the ilium.

The ventral expanded portion measures 21 centim. at the widest place; the median border is slightly curved and bears the impress of the cartilage which still separated the two bones; these also made an angle of about 120° with one another. The symphysis of the pubes and ischia forms a curved line, convex dorsally. Each obturator foramen (if closed) was oval, the shorter axis (antero-posterior) measuring 10 centim., the longer 12.

The *ilium* (*il*) is a slightly curved, stout, rod-like bone 18.5 centim. long. Its lower end is stout and massive and bears two articular surfaces, one for union with the ischium, the other forming the hindermost portion of the acetabulum*.

* The separation of the ilium from the pubis in *Murænosaurus* has been pointed out by Seeley (Proc. Roy. Soc. vol. li. (1892) p. 137); the same arrangement is described by Cragin in *Trinacromerum* ('American Geologist,' vol. viii. (1891) p. 174), and is also shown in Conybeare's restoration of the pelvic girdle of *Plesiosaurus dolichodeirus* (Trans. Geol. Soc. ser. 2, vol. i. (1824) pl. xlix. fig. 4). It also occurs in *Pliosaurus*, *Peloneustes*, and *Cryptoclidus*, and, indeed, is probably universal among the Plesiosauria.

The middle of the bone is rounded and measures 9·5 centim. in circumference ; its upper portion is compressed laterally, so that it is only about 1 centim. thick ; its greatest width is

Fig. 3.

Pelvic girdle of *Murænosaurus* from the side. *pu*, pubis ; *is*, ischium ; *il*, ilium. About $\frac{1}{11}$ nat. size.

5·7 centim. ; the upper border is curved and bears a groove for cartilage. The inner surface bears scarcely any trace of its junction with the sacral ribs, and the connexion with the vertebræ must have been a very slight one, the whole pelvis having been held firm chiefly by the greatly expanded pubes. The distance between the upper ends of the ilia is about 13 centim.

The dimensions of the associated femora are :—

	centim.
Length	28
Circumference of shaft at the narrowest point	18
Width of distal end	16

Numerous cervical vertebræ, as well as some dorsals and caudals of the same individual, are preserved in the collection.

LIX.—*Description of a supposed new Species of Land-Mollusk of the Genus Parmarion from Pulo Laut, an Island off the South-east Coast of Borneo.* By Lieut.-Col. H. H. GODWIN-AUSTEN, F.R.S., F.Z.S., &c.

[Plate XIX.]

IN a collection of land-shells preserved in spirit, collected by Mr. William Doherty, of Cincinnati, in the islands of the Malay Archipelago, I found two specimens of a slug-like form from Pulo Laut, the island off the south-east coast of Borneo. I hasten to describe it, having early this year, in conjunction with Mr. Walter E. Collinge, published a paper

in the 'Proceedings of the Zoological Society of London' (March 1895, p. 241) on some species from Kina Balu Mountain and Sarawak, in Borneo itself. The animal being very similar in outward appearance, it was a surprise to me to find it, on closer examination, to differ considerably from those we had described. I have great pleasure in naming it after its discoverer, who has proved himself to be a most indefatigable collector, not only of land-mollusca, but more particularly of the Lepidoptera, on which he has written several papers very valuable as regards geographical distribution. Among the land-shells he has placed in my hands are many very interesting species.

Parmarion Dohertyi, sp. n.

Hab. Pulo Laut Island.

Animal (Pl. XIX. figs. 1 and 2).—Length of the largest specimen 20 millim., visceral mass about 6 millim.; length of the smallest 15 millim. The mucous gland and the extremity of the foot is similar to the species from Borneo, placed in *Microparmarion*; but the shell is more globose, and the round, solid, spiral, visceral mass shows this even after the shell is detached. The thicker portion of the shell (fig. 3, $\times 4$) is oval above, flat, thin, becoming a transparent membrane on the posterior and lower portions; its colour is a faint ochraceous tint. It has about $1\frac{1}{2}$ whorls, and the apex being rather closely wound, it is impossible to extract the animal without breaking away a large part of the membranaceous interior portion. This is shown in fig. 4 (a view of the lower side), where a portion is still intact, while it was once continuous over all anteriorly.

The largest shell measures in major diameter 8.0 millim., minor diameter 5.5 millim.

The specimens I have to describe from, having been plunged too suddenly into strong spirit, are very much contracted and hardened; the eye-tentacles are protruding and the anterior portion of the mantle is rolled up, the edges being turned in underneath, so that it is not altogether clear what the form of the shell-lobes might have been when alive and what the portion near the respiratory orifice was like. I have drawn the largest exactly as it is preserved.

The mantle is very closely and distinctly papillate, as is also the posterior side of the foot; this is sharply keeled above. The sole of the foot has a central area. The tentacles are apparently long and dark-coloured. The pallial margin of the foot is not so distinctly marked off from the

Godwin-Austen, Henry Haversham. 1895. "LIX.—Description of a supposed new species of land-mollusk of the genus *Parmarion* from Pulo Laut, an island off the south-east coast of Borneo." *The Annals and magazine of natural history; zoology, botany, and geology* 16, 434–437.

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