Venus spurca. *Ven. testâ ovatâ, crassâ, sordidè fulvâ fusco radiatim maculosâ, concentricè subobsoletè costellatâ, costellis obtusis, prope latera subinterruptis; margine ventrali intùs denticulato: long.* 1·1, *lat.* 0·6, *alt.* 0·9 *poll.*

Hab. ad Valparaiso.

Found in coarse sand at a depth of from thirty to fifty fathoms.—G. B. S.

Genus Cytherea.

Cytherea radiata. *Cyth. testâ subtrigonâ, subæquilaterâ, gibbosâ, pallescente brunneo radiatâ et undulatim pictâ, lævi, epidermide corneâ crassiusculâ plus minusve indutâ; lateribus antico posticoque ventrem versus rotundatis; margine ventrali rectiusculo, intùs lævi: long.* 2·5, *lat.* 1·5, *alt.* 2· *poll.*

Hab. ad oras Columbiæ Occidentalis. (Salango and Xipixapi.)—G. B. S.

This species belongs to that division of the genus which has four cardinal teeth, and is destitute of the cordiform anterior impression.

Found in sandy mud at a depth of nine fathoms.—G. B. S.

Cytherea unicolor. *Cyth. testâ ovato-subcordiformi, crassiusculâ, brunnescente, lævi, politâ; lateribus antico posticoque concentricè sulcatis, sulcis medio obsoletis; latere postico longiore, versus partem ventralem subacuminato; margine ventrali lævi, intùs purpurascente: long.* 1·6, *lat.* 0·75, *alt.* 1·3 *poll.*

Hab. ad Real Llejos Americæ Centralis.

Variat *testâ majore, albicante.*

Found in coarse sand at a depth of six fathoms.—G. B. S.

Cytherea concinna. *Cyth. testâ ovato-subcordatâ, crassiusculâ, rubente albicante radiatâ; latere postico longiore, subacuminato; costellis numerosis, concentricis, obtusis, concinnis, confertis: long.* 1·6, *lat.* 0·8, *alt.* 1·2 *poll.*

Hab. ad Panamam.

Found at a depth of ten fathoms in fine sand.—G. B. S.

Cytherea squalida. *Cyth. testâ ovato-subcordatâ, crassiusculâ, lævi, pallidè fuscâ, nonnunquam maculis irregularibus saturatioribus; epidermide fuscâ; latere postico longiore, prope partem ventralem subacuminato: long.* 2·7, *lat.* 1·3, *alt.* 2· *poll.*

Hab. ad Sanctam Elenam.

This shell bears some resemblance to *Cyth. maculosa.* It has generally a very dull and dirty aspect. One of the several varieties in Mr. Cuming's collection is rather agreeably ornamented with concentric purple bands.

Found in sandy mud at a depth of six fathoms.—G. B. S.

A paper was read by Mr. Owen, entitled, "Description of a Microscopic *Entozoon* infesting the Muscles of the Human Body." The author observes, that upwards of fifteen different kinds of internal parasites are already known to infest the human body, but none have been found of so minute a size, or existing in such astonishing num-

bers, as the species about to be described. The muscles of bodies dissected at Saint Bartholomew's Hospital had been more than once noticed by Mr. Wormald, the Demonstrator of Anatomy at that establishment, to be beset with minute whitish specks; and this appearance having been again remarked in that of an Italian, aged 45, by Mr. Paget, a student of the hospital, who suspected it to be produced by minute *Entozoa*, the suspicion was found to be correct, and Mr. Owen was furnished with portions of the muscles, on which he made the following observations.

With a lens of an inch *focus* the white specks are at once seen to be cysts of an elliptical figure, with the extremities in general attenuated, elongated, and more opake than the body (or intermediate part) of the cyst, which is sufficiently transparent to show that it contains a minute coiled-up worm. On separating the muscular *fasciculi*, the cysts are found to adhere to the surrounding cellular substance by the whole of their external surface, somewhat laxly at the middle dilated part, but more strongly by means of their elongated extremities. When placed on a micrometer, they measure $\frac{1}{30}$th of an inch in their longitudinal and $\frac{1}{100}$th of an inch in their transverse diameter, a few being somewhat larger, and others diminishing in size to about one half of the above dimensions. They are generally placed in single rows, parallel to the muscular fibres, at distances varying from $\frac{1}{2}$ a line to a line apart; but sometimes a larger and a smaller cyst are seen attached together by one of their extremities, and they are occasionally observed slightly overlapping each other.

If a thin portion of muscle be dried and placed in Canada balsam, between a plate of glass and a plate of talc, the cysts become more transparent, and allow of the contained worm being more plainly seen. Under a lens of the *focus* of $\frac{1}{2}$ an inch, the worm appears to occupy a circumscribed space of a less elongated and more regularly elliptical form than the external cyst, as if within a smaller cyst contained in the larger: it does not occupy more than a third part of the inner space. A few of the cysts have been seen to contain two distinct worms; and Mr. Farr, who has paid much attention to the subject, exhibited a drawing of one of the cysts from this subject, containing three distinct worms, all of nearly equal size. Occasionally the tip of one of the extremities of the cyst is observed to be dilated and transparent, as though a portion of the larger cyst were about to be separated by a process of gemmation; and these small attached cysts are seen of different sizes, and, as it were, in different stages of growth. This appearance, however, Mr. Owen conceives to be explicable without a reference of a power of independent vitality to either of the adherent cysts. The cysts are composed of condensed and compacted *lamellæ* of cellular tissue; but a few are hardened by the deposition of some earthy salt, so as to resist the knife and to produce a gritty sensation when broken under pressure.

When removed from the interior of the cyst, which, on account of the minuteness of the object, is a matter of some difficulty, the worm is usually found to be disposed in two or two and a half spiral coils. When straightened it measures from $\frac{1}{25}$th to $\frac{1}{30}$th of an inch in length,

and from $\frac{1}{700}$th to $\frac{1}{800}$th of an inch in diameter: a high magnifying power is consequently required for its examination. It is round and filiform, terminating obtusely at both extremities, which are of unequal sizes, and tapering towards one end for about a fifth part of its length, but continuing of uniform diameter from that point to the opposite extremity. As it is only at the larger extremity that he has been enabled to distinguish an indication of an orifice, Mr. Owen regards that as the head. He states that this indication has been so constant in a number of individuals examined under every variety of circumstance, that he has no hesitation in ascribing a large transverse linear orifice or mouth to the greater extremity.

The recently extracted worm, observed by means of a Wollaston's doublet, before any evaporation of the surrounding moisture has affected its integument, presents a smooth transparent external skin, inclosing a fine granular and flaky substance or *parenchyma*. It is obvious that the test of coloured food cannot here be applied to elucidate the form of the digestive organs, but there is no appearance of the *parietes* of an alimentary canal floating in a visceral cavity and distinct from the integument of the body, nor was any trace of an orifice observed at the smaller extremity. Mr. Owen was also unable to detect in any instance a projecting *spiculum* or hook at either extremity, or any appearance of the worm having been torn from an attached cyst. Its transparency is such as not to admit of a doubt as to its wanting the ovarian and seminal tubes, and the other characteristics of the complicated structure of *Filaria*, *Ascaris*, and the *Nematoid Entozoa* generally. It is not of a rigid texture, but is extremely fragile, and exhibits when uncoiled a tendency to return in some degree to its former state.

Mr. Owen refers to the genus *Capsularia* as established by Zeder, and rejected by Rudolphi, (who considers its species as belonging either to *Filaria* or *Ascaris*,) for the purpose of contrasting the complicated organization of the worms composing it with the extremely simple structure of the encysted worm under consideration. The circumstance of being inclosed in cysts he stated to be common to many very differently organized genera of *Entozoa*. There are few, indeed, with the exception of those which live upon the mucous surfaces of the body, that do not, by exciting the adhesive inflammation, become inclosed within an adventitious cyst of condensed cellular substance. He regards the simple type of structure exhibited by the minute animal now for the first time described as approximating it to the lower organized groups of the *Vers Parenchymateux* of Cuvier; and both from its locality and from the constancy of its cysts, he regards it as manifesting a relation of analogy to the order *Cystica* of Rudolphi. From all the genera of that order, however, it differs in the want of the complex armature of the head, and of the dilated vesicle of the tail. At first sight it seems indicative of an annectant group which would complete the circular arrangement of the *Entozoa* by combining the form of the *Filariæ* of the first, with some of the characteristics of the *Cysticerci* of the last, of Rudolphi's orders. Unfortunately the class *Entozoa*,

as it now stands, is so constituted that an animal may be referred to it without much real or available knowledge of its organization being thereby afforded: it embraces animals with the molecular, and others with the filiform, condition of the nervous system; conditions which are accompanied by different types of the digestive system, and which indicate not merely differences of class, but even of primary division, in the animal kingdom. Mr. Owen considers the animal under consideration as being most nearly allied to that form of the *Polygastric Infusoria* which is exhibited by the lower organized *Vibriones* of Müller, and of which Ehrenberg has composed his genera *Vibrio*, *Spirillum*, and *Bacterium*; and that, like the seminal *Cercariæ*, it may be regarded as an example from the lowest class of the animal kingdom having its *habitat* in the interior of living animal bodies. Referring it, however, provisionally, to the class *Entozoa*, in which it would indicate a new order, its generic character may be thus given:

TRICHINA.

Animal pellucidum, filiforme, teres, posticè attenuatum: ore lineari, ano discreto nullo, tubo intestinali genitalibusque inconspicuis. (In vesicâ externâ cellulosâ, elasticâ, plerumque solitarium.)

TRICHINA SPIRALIS. *Trich. minutissima, spiraliter, rarò flexuosè, incurva; capite obtuso, collo nullo, caudâ attenuatâ obtusâ.* (*Vesicâ externâ ellipticâ, extremitatibus plerumque attenuatis elongatis.*)

Hab. in *hominis* musculis (præter involuntarios) per totum corpus diffusa, creberrima.

Mr. Owen further states that within about a fortnight of the former case, a second body similarly affected had been brought into the dissecting-room of Saint Bartholomew's Hospital; and some notes were furnished by Mr. Paget, who first observed the worms in the Italian, with regard to the cases of the two patients while living in the Hospital. From these it appeared that both had died after long and debilitating illness, producing great emaciation, unaccompanied, however, with any eruption on the skin, or any greater loss of muscular power than would probably have arisen from the diseases of which they died. The occurrence of two cases in the same dissecting-room within so short a period of each other, and the recollection of similar appearances being not unfrequently present in other bodies dissected there, combined with an account published in the Medical Gazette for February 2, 1833, of very small *Cysticerci* occurring in the muscles of a subject at Guy's Hospital, which cannot but be considered referrible to the same cause, render it highly probable that a sufficient number of observations will soon occur to elucidate this curious disease. In two of the cases the emaciation was accompanied by external, and in the third by internal, ulceration; but no connexion was traced between the worm and any of the symptoms of the disease.

In a portion of muscle placed, after it had reached a state of incipient putrescence, in spirit of wine for three days, the worms, when pressed out from their cysts, exhibited languid, but sufficiently evi-

dent motions, consisting in the tightening and relaxation of their coils: and more languid motions were afterwards noticed in some specimens that were examined a fortnight after the death of the subject from which they were obtained.

Mr. Owen enters at some length into the question of the origin of the cyst, and after comparing its structure and connexions with various more or less analogous productions, he states his opinion that the cyst is adventitious, foreign to the *Entozoon*, and composed of the cellular substance of the body infested, morbidly altered by the irritation of the worm.

The reading of the paper was accompanied by the exhibition of drawings showing portions of the infested muscle, with magnified representations of the cysts and of the worms contained within them; and specimens of the objects themselves were also placed upon the table for examination with the aid of Mr. Pritchard's microscope, lent by him for that purpose.

Mr. Owen also read a Paper "On the Anatomy of *Linguatula Tænioides*, Cuv." After referring to the observations on the anatomical structure of this highly organized *Entozoon*, published by Cuvier and Rudolphi, he proceeds to state the results of his own dissection of a fine specimen, 3½ inches in length, for which he was indebted to Mr. Langstaff. The whole body is invested with a smooth, transparent, rather fine cuticle, which, from maceration, and probably slight decomposition, had become detached. In this *epidermis* there exist no marks of an annulate structure; but the *cutis*, or muscular *parietes* of the body, is distinctly divided into segments slightly overlapping each other, and most obvious on the sides of the body, which are its thickest and most muscular portions. The dorsal and ventral *parietes*, on the contrary, are so transparent as to allow of the contained parts being readily seen through them.

The most essential difference between *Linguatula* and the *Cestoidea*, among which it was first placed by Chabert, consists in the generative organs being androgynous, with the oviduct continued from one end of the body to the other. Rudolphi, uncertain with regard to the structure of the digestive organs, placed it among the *Trematoda*; but the specimen under examination affords conclusive evidence of the justice of Cuvier's removal of it to the *Nematoidea*. The alimentary canal commences at the central *foramen*, or true mouth, and runs straight to the opposite extremity of the body, terminating immediately above the orifice of the genital tube; the *œsophagus* being ¼rd of a line in length, and opening into a suddenly dilated canal, which continues with little variation of diameter to the *anus*.

At the distance of a line posterior to the mouth, on the ventral aspect of the body, the narrow extremities of two elongated vesicles, 3 lines in length and more than ¼ a line in diameter, adhere firmly to the integument, the remainder hanging freely in the abdominal cavity. These Mr. Owen considers to be analogous to the impregnating glands of the hermaphrodite *Rotifera*, &c. The ovary, which is distinct from the tube so called by Cuvier and Rudolphi, is a nar-