tube in passing through the red luminosity. The effect was quite unexpected, and it was thought at first that it might have arisen from some peculiarity in the development of the dry plate; it was not therefore until the result had been confirmed by other photographs that they ventured on the explanation above given.

A few experiments were made with hydrogen in this same tube; and the appearances observed are shown in Fig. 6, A B C.

Pressure 22 mm., 28,948 **M**, 11,000 cells, current 0·01412 **W**. The glow on negative extended to three-eighths of an inch, a spear-head luminosity on the positive wire, to which it was attached by a very bright wire-like stem not greater in diameter than the terminal, A (Fig. 6).

Pressure 15 mm,, 19,737 **M**, 11,000 cells, current 0·03071 **W**. A spindle-shaped luminosity at the positive about $1\frac{1}{2}$ inch long, and the negative ring completely surrounded with a glow which had increased considerably since A. After a short time the spindle on the positive lengthened out and nearly reached the negative, hugging the under-side of the tube as in B (Fig. 6). It was not sensitive to the approach of the finger, although close to the glass; 6,300 cells produced the same phenomena.

Pressure 4 mm., 5,263 **M**, 6,300 cells, current 0·03459 **W**. The discharge in the latter case was partially stratified, C.

The paper closes with the following conclusions:—

1. *For all gases there is a minimum pressure which offers the least resistance to the passage of an electric discharge. After the minimum has been reached, the resistance to a discharge rapidly increases as the pressure of the medium decreases.* With hydrogen the minimum is 0·64 mm., 842 **M**; at 0·002 mm., 3 **M**, it is as great as at 35 mm., 46,000 **M**.

2. *There is neither condensation nor dilatation of a gaseous medium in contiguity with charged terminals.*

3. *When the discharge takes place there is a sudden dilatation of the medium in addition to, and distinct from, that caused by heat. This dilatation ceases instantaneously when the discharge ceases.*

4. *The potential necessary to produce a discharge between parallel flat surfaces at a constant distance and various pressures, or at a constant pressure and various distances, may be represented by hyperbolic curves. The resistance of the discharge between parallel flat surfaces being as the number of molecules intervening between them.*

5. *This law does not hold with regard to points. In Part I. it has been shown that the potential necessary to produce a discharge at the atmospheric pressure and various distances is as the square root of the distances, while with a constant potential and various distances, the pressure has to be diminished in a greater ratio than that of the increase of distance in order to permit a discharge to take place.*

6. *The electric arc and the stratified discharge in vacuum tubes are modifications of the same phenomenon.*

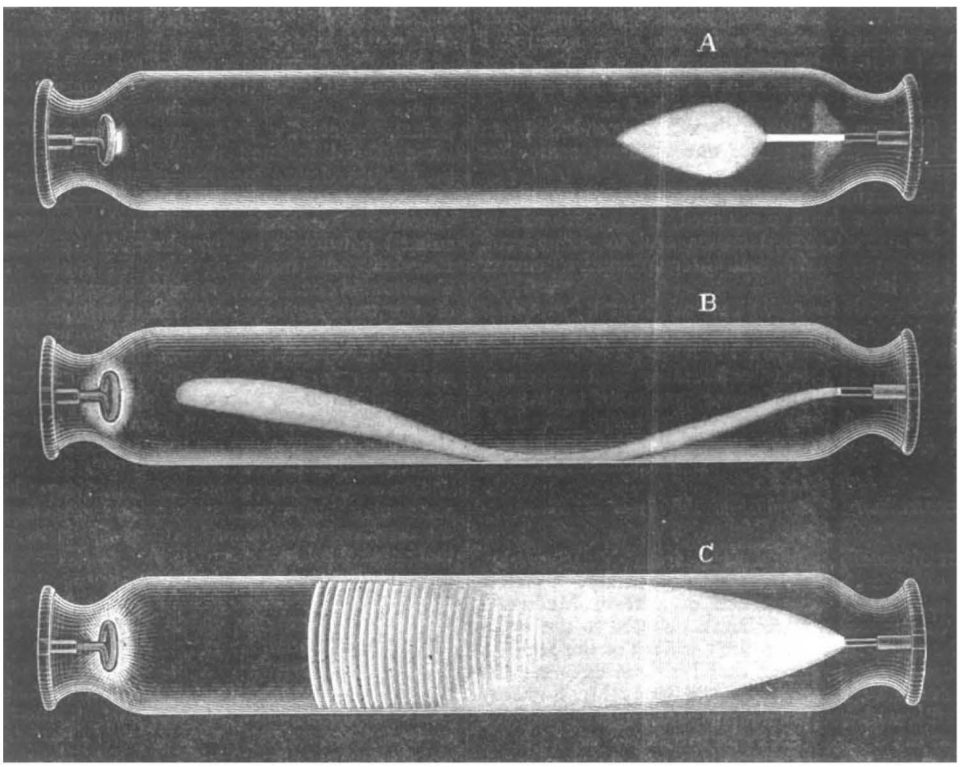

Fig. 6.

Lastly, the authors say:—

"We have again pleasure in thanking Prof. Stokes for his much-valued advice during the course of our investigations. To our assistant, Mr. Fram, we are indebted for his able co-operation; and we have to thank Mr. H. Reynolds for his aid and skill in taking photographs."

THE NEW FRESHWATER JELLY FISH

We have received the following communications on this subject:—

The Freshwater Medusa

When I last week sent you an account of the new genus of freshwater Medusæ, to which I gave the name Craspedacustes, I was not aware that Prof. Allman had prepared, or even that he was intending to prepare, an account of the same animal for the Linnean Society's meeting of Thursday (your day of publication). The specimens on which I worked were given to me by Mr. Sowerby, the secretary of the Botanical Society, who discovered the animal, and in reply to my particular inquiry as to whether any naturalist had been charged by him with the task of working it out, he said that no one had, but that he had freely given specimens to several gentlemen. He asked me to find a name for the new Medusa, and I promised to send him a copy of what I should publish on the subject.

I hold it to be a very excellent thing that there is a certain kind of honour attaching to the priority of description of new and important genera among zoologists. It appears to me to give a zest and stimulus to hard work in the cause of zoology which is very far from being a thing to be despised. I confess to having worked at that Medusa day and night when I first obtained it, with the object of having the pleasure and honour of being the first to expound its structure to my brother naturalists.

At the same time I wish to say that had I known that so esteemed and veteran a zoologist as Dr. Allman was anxious to associate himself with this little novelty, I should have felt it to be only consistent with the great personal regard which I entertain for him to abstain from any publication on the subject until he had come forward to provide the new Medusa with a name, which I am sure would have been a prettier one than my somewhat unwieldy proposal.

Under these circumstances it gives me great pleasure to say that, so far as I am concerned, I am quite willing to give up the name Craspedacustes, and to adopt Prof. Allman's name for the new freshwater Medusa whenever he may publish it.

I have no doubt that we shall shortly hear a great deal more about the freshwater Medusa, since it is very abundant in the Regent's Park lily-house, and since Mr. Sowerby, with true scientific liberality and courtesy, freely allows naturalists who desire specimens to provide themselves with such, and has very properly placed no restriction upon their study or on the publication of results.

E. RAY LANKESTER

On "Limnocodium victoriæ," a Hydroid Medusa of Fresh Water

A SHORT time since I received from Mr. Sowerby, Secretary of the Royal Botanical Society, a letter informing me of the occurrence of certain Medusoid organisms in the warm-water tank devoted to the cultivation of the *Victoria regia* in the Gardens of the Society. The letter contained a request that I should examine the animals with a view to their determination; Mr. Sowerby accompanied it with rough sketches, and offered to place specimens at my disposal for investigation.

The discovery of true freshwater Medusæ was so startling a fact that I lost no time in calling on Mr. Sowerby, with whom I visited the tank, and carried away such specimens as were needed for examination.

The water in the tank had then a temperature of 86° F., and was literally swarming with little Medusæ, the largest of which measured nearly half an inch in transverse diameter. They were very energetic in their movements, swimming with the characteristic systole and diastole of their umbrella, and apparently in the very conditions which contributed most completely to their well-being.

As it now became evident that the Medusa belonged to a generic form hitherto undescribed, I prepared for the Linnean Society a paper containing the results of my examination, and assigning to the new Medusa the name of *Limnocodium victoria* (λίμνη, a pond, and κώδων, a bell). This was received and recorded by the secretaries on June 14, and read at the next meeting, on the 17th.[1]

[1] Some facts in addition to those contained in my original paper are included in the present communication.

The umbrella varies much in form with its state of contraction, passing from a somewhat conical shape with depressed summit through figures more or less hemispherical to that of a shallow cup or even of a nearly flat disk. Its outer surface is covered by an epithelium composed of flattened hexagonal cells with distinct and brilliant nucleus. The manubrium is large; it commences with a quadrate base, and when extended projects beyond the margin of the umbrella. The mouth is destitute of tentacles, but is divided into four lips, which are everted and plicated. The endoderm of the manubrium is thrown into four strongly-marked longitudinal plicated ridges.

The radial canals are four in number; they originate each in an angle of the quadrate base of the manubrium, and open distally into a wide circular canal. Each radial canal is accompanied by longitudinal muscular fibres, which spread out on each side at the junction of the radial with the circular canal.

The velum is of moderate width, and the extreme margin of the umbrella is thickened and festooned, and loaded with brownish-yellow pigment cells.

The attachment of the tentacles is peculiar. Instead of being free continuations of the umbrella margin, they are given off from the outer surface of the umbrella at points a little above the margin. From each of these points, however, a ridge may be traced centrifugally as far as the thickened umbrella margin; this is caused by the proximate portion of the tentacle being here adnate to the outer surface of the umbrella. It holds exactly the position of the "mantelspangen" or *peronia*, so well developed in the whole of the Narcomedusæ of Haeckel, and occurring also in some genera of his Trachomedusæ. Its structure, however, differs from that of the true *peronia*, which are merely lines of thread-cells marking the path travelled over by the tentacle as the insertion of this moved in the course of metamorphosis from the margin of the umbrella to a point at some distance above it, while in Limnocodium the ridges are direct continuations of the tentacles whose structure they retain. They become narrower as they approach the margin.

The number of the tentacles is very large in adult specimens. The four tentacles which correspond to the directions of the four radial canals or the perradial tentacles are the longest and thickest. The quadrant which intervenes between every two of these carries, at nearly the same height above the margin, about thirteen shorter and thinner tentacles, while between every two of these three to five much smaller tentacles are given off from points nearer to the margin, and at two or three levels, but without any absolute regularity; indeed, in the older examples all regularity, except in the primary or perradial tentacles, seems lost, and the law of their sequence ceases to be apparent.

I could find no indication of a cavity in the tentacles; but they do not present the peculiar cylindrical chorda-like endodermal axis formed by a series of large, clear, thick-walled cells which is so characteristic of the solid tentacles in the Trachomedusæ and Narcomedusæ. From the solid tentacles of these orders they differ also in their great extensibility, the four perradial tentacles admitting of extension in the form of long, greatly-attenuated filaments to many times the height of the vertical axis of the umbrella, even when this height is at its maximum; and being again capable of assuming by contraction the form of short thick clubs. Indeed, instead of presenting the comparatively rigid and imperfectly contractile character which prevails among the Trachomedusæ and the Narcomedusæ, they possess as great a power of extension and contraction as may be found in the tentacles of many Leptomedusæ (Thaumantidæ, &c.). These four perradiate tentacles contract independently of the others, and seem to form a different system. All the tentacles are armed along their