longation of the horny sheath (*Figs.* 17, A, to 21, *c*); but here it has much more consistence than in Coryne. Each medusa is elevated on a short stem (*Fig.* 17, A *a*), which elongates with age, until, by the time the spermatic particles are discharged (*Fig.* 21), it nearly equals the length of the medusa. This stem has a double wall (*a b*), like that of the hydroid, but the inner one (*b*) retreats from the outer one (*a*) at the base of the medusa, and projects freely into the disk, as a proboscis (*d*). In reality, although the form is altogether different, the structure of the medusa is the same as in Clava; the spermatic mass occupies a homologous position, and is developed in the same manner, and with a similar diminution in the size of the proboscis. The youngest medusa which we have observed, was nearly cylindrical in form (*Fig.* 18), being slightly swollen toward the base, and coming to a point rather suddenly at the end, where the wall was very thick. The cylindrical proboscis (*d*) traversed nearly the whole length of the disk, and was completely enveloped in the mass of deep orange-colored spermatic matter (b^2), which filled the cavity of the disk. With increasing age, the spermatic mass grows paler, and when fully matured, it is white (*Fig.* 20). After the discharge of the spermatic particles, the medusa becomes cylindrical (*Fig.* 21), whilst the proboscis dwindles down to a shrivelled, diminutive mass.

In other genera we have been accustomed to see the medusa wither and decompose, after it had matured and discharged its reproductive contents; but here an unusual and unexpected phenomenon takes place; *one and the same individual medusa, after discharging its reproductive organs, is metamorphozed into a hydra*; the same wall which formed the disk (*Fig.* 22, a^1) of the medusa grows upward (*a*), and forms a long, cylindrical body, within which an inner wall (b^1 *b*) develops, from the base of the still persistent proboscis (*d*), and completely lines the outer wall. We have traced this metamorphosis up to the time when the head of the hydra had begun to form, and its tentacles were just far enough advanced to give it a knotted appearance, but unfortunately the specimens died, and we have not been able to investigate the matter any further. The figure which we give here, representing this stage of growth, was taken from the animal when the basal part, or the original stem of the medusa, was so retracted that the base of the proboscis (*d*) was brought nearly down to the stolon. The spermatic particles have a broadly fusiform head (*Fig.* 23, A B), and a tail only four times longer than the head. This retrograde metamorphosis of a medusa into a hydra, is the most direct evidence, thus far obtained, of the structural identity of the free Medusæ and the Hydroids proper. It shows beyond the possibility of a doubt that the Hydroids themselves are not Polyps, but Acalephs, in the same way as Myriapods are Insects and not Worms, notwithstanding their many rings and elongated form.