another, as in *Charybdaea* (fig. 4), where there are four gastric pouches communicating with the central stomach by four so-called gastric ostia (fig. 4). A similar condition is seen in *Pelagia,* where the number of gastric pouches is increased to sixteen. In forms such as *Lucernaria* and *Charyb­daea,* in which the umbrella is of deep form and the stomach- cavity consequently of great extent in the vertical direction, the concrescence-areas or septal nodes are drawn out into vertical partitions or *taeniolae* (fig. 4, L.o.c.), resembling in their anatomical relations the mesenteries of the Anthopolyρ. The phacellae are carried on the edges of the taeniolae (fig. *Gh).* Finally in the majority of Scyphomedusae the primitively simple coπ- crescence-areas become in­creased in number and in extent, so that radial canals, ring-canals, &c., can be distinguished in addition to stomach- pouches. Thus in *Aurelia* (figs. *2a* and 2*b*), to take a familiar example, the digestive tract begins with the mouth, of which the four corners are prolonged into the four long oral arms, perradial in position. The mouth leads into the spacious stomach containing the four conspicuous horse- shoe-shaped gonads *(ov)* marking four stomach-pouches, which, however, are inter- radial in position. From the stomach or its pouches arise sixteen radial canals, four perradial, four interradial and eight adradial (fig. 2*b*). The perradial and interradial canals consist of a main stem giving off branches, and both stem and branches reach to the marginal ring-canal, the main stem ending in one of the eight tentaculocysts, which are lodged in the notches between the lobes of the umbrellar margin. The adradial canals are unbranched and run to the middle point of one of the marginal lobes. The system of canals shows

great variation even in the same species.

The muscular system of the Scyphomedusae is developed on the

subumbral surface as a system of circularly disposed fibres which by their contraction make the umbrella more concave and diminish its

cavity. The circular muscles usually form two chief portions, a peripheral wreath-muscle (*Kranzmuskel),* subdivided into four, eight or sixteen areas, and an oral ring-muscle round the mouth. Endo- dermal muscles are found in the phacellae, and in such forms as *Lucernaria,* longitudinal (vertical) muscular tracts or bands are found in the taeniolae, which, according to some authorities, are

of endodermal origin, but which, according to recent observations, are formed in the walls of the infundibular cavities, and are therefore of ectodermal origin.

The nervous system consists as in Hydromedusae of a diffuse plexus beneath the ectoderm, concentrated in certain places to form a central nervous system. In these medusae, however, the central nervous system does not form continuous rings, but occurs as four or eight separate con­

centrations at the

margin of the um­

brella, centred each

round one of the

sense-organs (teπta-

culocysts). Each

nerve-centre controls

its own antimere or

segment of the body,

receiving sensory im­pressions from the

tentaculocyst and innervating its special

subdivision of the

muscular system.

The separate nerve-

centres are, as a rule,

placed in communi­

cation only by the

general nerve-plexus,

but in Charybdaea

there is a zigzag

marginal nerve connecting them up.

The sense-organs of the Scyphomedusae are on the whole of a very uniform type.

They are always tentaculocysts, as already stated, and they always have a hollow axis, unlike the tentaculocysts of Hydromedusae, in which group these organs, when they do occur (as in Trachy- linae) are always solid. Two types of tentaculocyst must be distinguished, the one occurring only in the order Stauromedusae, the other in all orders of the group. The second and commoner type is known as a *rho­palium* (fig. 6) and consists of a short, hollow rod, the wall of which is composed of the two body- layers, ectoderm and endoderm, enclosing a cavity continuous with that of the gastrovascular system.

At the apex of the rhopalium the en­doderm is greatly thickened and con­sists of concrement- cells secreting otoliths (*Con).* The more proximal por­tion of the rhopalium usually bears one or more ocelli (*oc*). The rhopalia are lodged in the notches between the marginal lobes of the umbrella, and each rhopalium is covered over by a little protecting flap or lappet. On the external (*i.e.* exumbral) face of the lappet there is frequently a patch of sensory ciliated epithelium regarded as olfactory in function and termed the olfactory pit (fig. 6, A). Each rhopalium is a centre round which, as already stated, nervous tissue is concentrated.

The *otoliths* vary considerably in number and size. In *Aurelia* there are found numerous otoliths arranged irregularly. In *Charyb­daea* (fig. 7, *otol)* the otoliths are larger but fewer in number and have a definite arrangement. In *Nausithoē* a single large otolith is found.