of the gastric cavity of the hydranth, while in *Myriothela* they are replaced by long, nipple-like processes of the endoderm, which project into the gastric cavity throughout its whole extent, except for a short space immediately below the mouth. These processes, like the more external portion of the endoderm, are formed of large, round, nucleated cells, but at their free extremities they are surrounded by numerous smaller cells which are loaded with coloured granules and are probably to be regarded as gland-cells. In the hydranths, indeed, of almost all Hydroids, certain endodermal as well as ectodermal cells would seem to possess the function of gland-cells. These endodermal gland-cells are chiefly developed in the walls of the hypostome.

In almost all Hydroida the endoderm undergoes a remarkable modification in the interior of the tentacles. In *Hydra* and *Myriothela* the tentacles have a hollow tubular axis, which communicates freely with the gastric cavity, and whose endodermal lining is a simple continuation, in a scarcely altered condition, of that of the body cavity.

In *Garveia nutans* also, the tentacle presents a continuous tubular axis, but the endoderm consists here of a regular series of large, clear, flat cells, piled on one another from the base to the apex of the tentacle, having their outer sides turned towards the ectoderm, from which they are separated only by the mesosarc, while their inner sides so encroach on the axial tube as nearly to obliterate it. In every other instance hitherto examined the tentacles of the hydranth are destitute of a cavity and their axis is occupied by a solid core of endoderm. In the great majority of cases this endodermal core is composed of a very remarkable tissue, which consists of large, cylindrical, or disc-shaped cells, which are arranged one over the other in a continuous series like coins in a rouleau. These cells have a distinct membrane and clear contents, with a central nucleus which is embedded in protoplasm, and frequently suspended by protoplasmic filaments to the walls. Kölliker assigns to this structure a place among the connective tissues, and Haeckel, under the name of "chordal tissue," compares it, as it occurs in the tentacles of certain Medusæ, to the tissue of the vertebrate notochord, to which it bears a strong resemblance.

In *Tubularia* and in *Corymorpha* the tentacles are disposed in two circlets, and the axial cells of the tentacles belonging to the proximal circlet become longitudinally divided, so that the axis presents the form of a tissue in which the cells have become multiplied laterally, and which is consequently no longer in the form of regularly superimposed discs. The tentacles of the distal circlet, however, in both these genera possess the ordinary rouleau-like axis.

It would seem that the solid axial tissue of the tentacles is in every instance separated by the mesosarc, not only from the ectodermal layer of the tentacle, but by a duplicature of the mesosarc from the endoderm which lines the body-cavity of the hydranth, as was first pointed out by von Koch[1] in *Tubularia*, where the axial

[1] G. v. Koch, *loc. cit.*