to study the formation of the germ-layers, nor the modifications which they undergo during development. Whether all the cells of the embryo in this stage are derived exclusively from the blastoderm, or whether they are also partly due to the deutoplasm is a question which it is impossible to answer from the section before me. Dorsally the greater part of the embryo is covered by a single row of flattened cells (the original blastoderm cells), ventrally a plate is clearly distinguished much thicker than the blastoderm, and doubtless formed of cells more than one row deep. Unfortunately, however, the limits of these cells were quite gone; I therefore could not distinguish either their number or arrangement, but I believe the evidence is great that in the inner layer of this plate the original mesoblast is to be seen. In this stage rudiments of the appendages are distinctly formed; and I consider it a very characteristic feature in the development of the Pycnogonids, that the food-yolk penetrates into these appendages. In the section here figured, however, that part of the food-yolk which penetrates the leg, is not in direct connection with the central food-yolk mass; but this is caused by the circumstance, that the section does not pass exactly vertically through the embryo, but goes a little obliquely from above backwards to the ventral side.

The blastoderm shows to a considerable extent in the stage I have figured a double cell-layer dorsally in the middle, and even a small lumen is observed between these two. Small cells or nuclei seem to be present in this lumen, and the whole arrangement made me think it possible that I had an early stage in the development of the heart before me. The broad and flattened condition of the heart in the adult animal of *Nymphon* is not opposed to this suggestion; yet it is difficult to understand why a heart should be developed before there seems to be any question of an intestinal tract.

About the same stage is also figured in figs. 9 and 10. At the ventral side the first pair of appendages (the foot-jaws), three pairs of legs, between the foot-jaws the proboscis, and the caudal protuberance, are easily distinguished. The second and third pair of cephalic appendages show in this species a remarkable retardation in their appearance, visible in the stage in which the first and second pair of true legs are already two-jointed and bent inwards so as to meet in the middle of the ventral surface, and in which the third pair is longer, yet bent inwards and forwards. In this same stage the third cephalic appendage is not yet distinguishable, and the second pair only shows a small protuberance at the base of the foot-jaws. An equatorial section of an embryo in this same stage is figured in fig. 11. Between the foot-jaws (*a*) and the first true leg (*b*) two small protuberances are distinguished, the first of which (*c*) is larger than the second (*d*), which in this stage is observed only interiorly. The section is also remarkable for the distinctness with which the nerve ganglia are seen.

There is good reason to consider this arrangement characteristic for the species *Nymphon brevicaudatum*, Miers. Other species of *Nymphon*, of course, may show the same; so far as I could ascertain it is not the rule, for neither *Nymphon*