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The Structure of the Renal Glomerulus

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The summer was spent principally on two fundamental problems: 1) The correlation of the light microscopic structure of the glomerulus, which seemed to show an intercapillary space, with the electron microscope appearances and, 2) A very limited number of applications of histochemical staining procedures to the structure of the glomerulus of the dogfish, seal, etc.

The light microscope can study stained preparations at magnifications up to 1500 diameter. The electron microscope studies of B. Vincent Hall, which I was privileged to study, begin at magnifications of around 4500 diameter. It was felt that between stained and unstained preparations on one hand and the fact of magnifications on the other, it was difficult to interpret a glomerular structure satisfactorily. The combination of staining and electron microscope studies seems to be highly indicated. It seems quite probable that staining may form bridges between the pedicels of the "visceral epithelium" and what is being seen with the light microscope in stained preparations is probably these pedicels.

The preliminary histochemical studies seem to make it quite probable that, at least in the dogfish, the "visceral epithelium" is actually of smooth muscle origin. It is pointed out that this is quite in keeping with the demonstration of the enzyme, 5-nucleotidase, found in high quantities in smooth muscle in several types of glomerular obsolescence as reported by McManus, Lupton, and Hardin (Laboratory Investigation, 1953).

**Cleavage and Cell Movement in the Early Development
of Gammarus.**

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Utilizing the techniques of vital staining and selective destruction of blastomeres, cleavage and cell movement in the early embryology of *Gammarus duebeni* were studied. Cleavage is holoblastic, unequal and determinate. The first two cleavages are meridional and the third latitudinal. The eight cell stage consists of four unequal micromeres and four unequal macromeres. The fourth cleavage is meridional and the fifth latitudinal. At approximately 32 cells, ingression of certain micromeres and macromeres occurs. Ten or eleven of the cells on the surface at the

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