

density, and in this condition acts upon the contents of the egg, causing great disturbances and a very false state of things. To avoid such an alteration, the serum must be changed often, and that held in reserve kept closely corked up, or, what is still safer, the animal resorted to for fresh supplies, if it has been opened carefully, so as not to allow the blood to become mixed with the fluid in requisition. With these precautions the whole ovary was surveyed under magnifying powers of from fifty to two hundred diameters, and the peculiar features of the eggs of all sizes noted, except those of the very minutest, which, on account of the short focus of the higher powers of the microscope necessarily used for their investigation, required to be observed in thinner portions of the organ carefully cut away.

In no case however was pressure, that great obstacle to all correct appreciation, applied, except to see what the effect might be, and also in certain experiments upon the consistency and elasticity of the contents of the egg. This is mentioned in particular, because the first glance reveals the fact that every egg in the ovary is more or less flattened, the oldest ones least, and those successively younger more and more, till the very minutest ones are reached, which again have the usual spherical form of simple cells. A peculiar brilliancy characterizes the surface of the ovary, which is owing to the circumstance that all the eggs, from nearly the smallest to those about one fiftieth of an inch in diameter, contain, on the side toward the surface of the ovary, a clear and more or less homogeneous fluid, underlaid by a darker and denser, yellowish, granular substance, facing the centre of the organ (Pl. 8, fig. 3-9). This peculiarity will be spoken of in detail, when describing the progressive stages of growth in the egg.

Now, knowing the features of the eggs of different sizes, when in an undisturbed state, portions of the ovary were carefully cut out, and the stroma dissected away in case of the presence of larger eggs, or thin spots examined for the smaller ones. Although, from their elasticity, eggs removed in this way assumed a natural shape and condition after instances of pressure or pulling with the point of the knife, yet such eggs were avoided in the examination of the contents, not knowing what effect might have been produced upon the ultimate structure of the yolk. This precaution in regard to the yolk was subsequently found to be in no small degree important, as reference to the plasticity and viscosity of the yolk cells will testify.<sup>1</sup> The stroma and the cells of the corpora graffiana are so exceedingly transparent that there is no difficulty in detecting the minutest eggs which may be imbedded therein (Pl. 8, fig. 1, *o*<sup>1</sup>,

<sup>1</sup> Water has a far more injurious effect even than pressure, especially upon the yolk cells, and is most

rigorously to be avoided in all cases. But more will be said upon this in detail hereafter.