

transparent, they do not require to be cut open, and, by sufficient caution, the whole series of embryonic changes may be observed upon the same individual, and thus the succession in which the organs appear be ascertained with precision; whereas, if we employ the eggs of birds, which are opaque, we are obliged to sacrifice an egg for each observation.

306. To illustrate these general views as to the development of the embryo, we will briefly describe the principal phases, as they have been observed in the White-fish of Europe, which belongs to the salmon family. The following magnified sections will illustrate this development, and show the period at which the different organs successively appear.



Fig. 111.

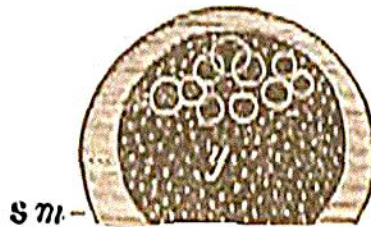


Fig. 112.

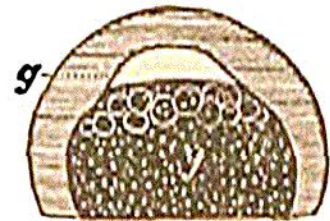


Fig. 113.

307. The egg, when laid, (Fig. 111,) is spherical, about the size of a small pea, and nearly transparent. It has no albumen, and the shell membrane is so closely attached to the membrane of the yolk, that they cannot be distinguished. Oil-like globules are scattered through the mass of the yolk, or grouped into a sort of disk, under which lies the germinative vesicle. The first change in such an egg occurs a few hours after it has been laid, when the shell membrane separates from the yolk membrane, in consequence of the absorption of a quantity of water, (Fig. 112,) by which the egg increases in size. Between the shell membrane (*s m.*) and the yolk, (*y.*) there is now a considerable transparent space, which corresponds, in some respects, to the albumen found in the eggs of birds.

308. Soon afterwards we see, in the midst of the oil-like