

breaking down some of the gravel crust above and over the nest. Thus is formed a complete spawning bed, not at once, not by a single effort, but piecemeal, and at several intervals of greater or less duration, according to the age and size of the fish and quantity of ova to be deposited." They are usually occupied from five to ten days.

When this task is accomplished they descend the stream to the nearest pool and there remain awhile to recruit. They are now Kelts, and unfit to be eaten. After they have somewhat recovered from the exhausting process of spawning, they proceed slowly down stream to the tide waters, where they linger a time before going out to their ocean feeding grounds. In Great Britain it has been observed that these streams which empty into a sea having a north and south direction, the Salmon, on returning, swim northward. It was long a matter of inquiry what they fed upon at sea. Upon opening their stomachs, Sir Humphrey Davy found only a little yellow fluid, and the parastical worms which bred there. That they found food of some kind, and that in great abundance, was well proved by their coming back in a few months so much increased in flesh and flavor. The microscopical observations of Dr. Knox have shewn that their sea food consists of the eggs of Echinodermata and Crustacea.

Let us now go back and look after the Salmon eggs which we left buried up in the sand and gravel at the bottom of the stream. Careful observations and experiments recently made in Great Britain, have disclosed many important particulars relating to the hatching and growth of the young Salmon. It has been ascertained that the time between the deposition of the ova and the appearance of the little fish varies with the temperature of the water. When the water is at 36° Fahrenheit, they are hatched in 114 days, when at 43° in 101 days, and when at 45° in 90 days. When the fish are first hatched the yolk of the egg is found adhering to the under side of the little fry; this is gradually absorbed, but does not wholly disappear until the expiration of about four weeks. During this time the fry are entirely supported or fed by this yolk, and feeling no hunger they make no effort to procure food. When first hatched they are about five-eighths of an inch long, of a pale peach blossom color, and by the time they are two months old, they have grown to about an inch and a quarter in length. During this period their growth is very slow, at six months they are not more than three inches and a half long, and are easily recognized by the transverse dusky bars which mark their sides, and the small red dots about the lateral line.—They are now called Parr, * and retain this appearance and name until they have grown to the length of about seven inches. But here a change suddenly comes over them, they loose the dusky transverse markings and red spots, and take on a more Salmon-like appearance; the back and sides down to the lateral line assume a dusky greenish hue, the sides below the lateral line and the belly, and the ventral and anal fins a shining silvery white. The fish is now one year old, and is called a Salmon Smolt. As soon as this change

* The Parr appearance is believed to be common to the young of all the Salmonidæ at a certain age.