



"NOW COMES THE TUG OF WAR" (p. 726).

A GOSSIP ABOUT THE SALMON.

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POSSIBLY the salmon is the best-known fish in the world, and despite the opinion of those who declare that the herring is the fish for epicures, the salmon appears likely to remain the "king of the fishes" in an edible sense, and to be the petted member of the fish-class. The importance of the salmon is oftener tacitly admitted than fully realised. Most people know that we make laws to protect his young and himself at various stages of their career; it is a matter of common remark that large sums of money are paid for the privilege of enticing him from his native rivers, and all are agreed that salmon-fisheries form a veritable mine of wealth to certain lucky beings who own or skilfully lease them. With all this information, however, there are comparatively few persons who are correctly informed regarding the habits of the salmon, or even know the difference between a "salmon" and a "grilse," or between a "grilse" and a "smolt." And it may be taken for granted that there are still fewer persons who could give a plain account of the ordinary life-history of a salmon, or render an "unvarnished tale" of the trials and vicissitudes of its by no means uninteresting existence.

There is but little need to describe the salmon itself. The graceful body, with its glistening armour

of steel-blue above and silvery white beneath, is a familiar object to every one. We may, therefore, pass to consider the history of the fish itself, and for that purpose we may transport ourselves in imagination to the upper reach of some Scotch river in the autumn or early winter. There and then we shall find that the salmon ascend for the purpose of depositing the eggs from which new generations of fishes will in due time be produced. The mother-fish soon shows her activity by excavating a trench or furrow, in which she deposits her eggs, which are duly fertilised by the "milt" of the male fish, who also covers over the eggs with gravel by the action of his tail and other fins. All authorities agree in crediting the salmon with extreme fertility. One method of estimating the number of eggs produced by a female fish is that of calculating every pound of her weight to represent 900 eggs. But despite this fertility, it cannot be denied that only a small proportion of the ova are developed into salmon. Salmon-eggs are a toothsome luxury to hosts of their finny neighbours. Hardly a fish exists that will not devour the eggs of the salmon. The bull-trout is their enemy; the pike is enamoured of them; many-tongued rumour credits *Salmo pater* himself as inclined when opportunity presents to eat his progeny; and not a few birds are known to slay and spare not in the matter of salmon-eggs. Here tells the full force of the argument in

favour of the artificial hatching of salmon-eggs. One account states that hardly one egg per thousand attains development in the natural state, the rate of one fish out of 3,000 eggs being based on reliable data. From 3,000 eggs the fish-breeder will produce at least 1,000 "smolts," or young fry; and although the chances against even a small proportion of this latter number attaining development are very great, yet the enormous advantages of the artificial over the natural method of hatching can be readily perceived. For once art is superior to nature, in so far as the result of giving us greater numbers of young salmon is concerned.

It need hardly be remarked that the earlier stages in the development of the salmon-egg are marked by an apparent quiet, which to the ordinary observer would seem to be ill-calculated to herald the birth of the young fish. But beneath the apparent quiescence, a wondrous process of building up the frame of the young fish is going on. From the jelly-like substance of the egg, *Madre Natura* is evolving bone and skin, muscle and nerve, and a general organisation which stands high indeed in the scale of being. The shortest period in which salmon-eggs can be hatched after their deposition is about ninety days; but much depends on the temperature and surrounding conditions. The young salmon at length emerges from the egg, as a tiny being, named a *parr*. The mention of this name gives rise to recollections of many an exciting argument and debate, both within and without courts of law, regarding the correct answer to the question, "Are parr the young of salmon?" The question may now be regarded as having been definitely answered in the affirmative, and we may, therefore, inquire in the next place what becomes of the parr. Sooner or later the parr becomes a *smolt*, and with the change of name acquires a change of costume; the smolt developing a bright shining armour of scales, and being thus at once distinguished from the more sombre-dressed parr.

A difficult, and at the same time very curious, question arises at this stage of our inquiries. The period at which the parr becomes the smolt is, or rather was, a point on which very varied opinions were pronounced. The chief point around which this discussion travelled may be summed up in the inquiry whether the parr arrived at the smolt-stage at the end of two years and two months after leaving the egg, or when they were between thirteen and fifteen months old. Competent authorities arrived ultimately at the conclusion with which Sir Roger de Coverley dismissed his difficulties, namely, that "much might be said on both sides." Both views were correct, but each only expressed half the truth. Each brood of salmon appears to divide itself into

two bands. One band goes to the sea as smolts at the end of the first year, and the other at the end of the second year, whilst not unfrequently a third party may delay its seaward journey in the character of smolts until the end of the third year. One of the latest opinions on this head may be cited, to the effect that 8 per cent. of the salmon become smolts at the end of the first year, 60 per cent. at the end of the second year, and 32 per cent. at the end of the third year of their life. Another authority maintains that the male parr, especially, are not prepared to pass to the sea until the second or third year of their existence. Be this as it may, the curious fact remains that the young salmon enter upon the days of their youth, so to speak, at different periods of their existence.

As may be gathered from what has already been remarked about the smolts, their destination is the sea. In the guise of a smolt, the young salmon pays its first visit to the ocean, leaving its native river in May or June. The parr will not only never seeks the sea, but, as far as we know, will die if placed in salt water. Once in the sea, however, the silvery smolt grows and thrives apace. The change of water serves as a stimulus to its powers of nutrition, and

most remarkable are some of the details furnished with regard to the rate of increase exhibited by the little fishes. The smolt attains a length of three or four inches, and in this stage proceeds to the sea. In a very few weeks these little fishes will return to their native rivers as *grilse*, weighing from three to five or even nine pounds, according to the length of their stay in salt water.

The grilse-stage may be regarded as that of the budding manhood of the salmon. As the grilse the fish is capable of producing eggs, and the fishes are supposed to spawn when they return from the sea to their native waters. The grilse in its turn leaves the river in due season and passes to the sea, but returns on its next visit to the river in its full development, and in the guise of the "salmon."

Each year, the salmon will migrate from fresh water to the sea, and will be found to increase amazingly after each seaward journey. The well-known experiment of the late Duke of Athole on the latter point may be referred to as illustrative of the rapid growth of the salmon. In 1859, three salmon, respectively weighing 10 lbs., 11½ lbs., and 12½ lbs., were caught as they were swimming to the sea. They were duly marked and set free. After six months' liberty they were again captured in the river, and weighed respectively 17 lbs., 18 lbs., and 19 lbs.

The value of the salmon as a food-fish has, of



necessity, stimulated legislation on the subject. The "Commissioners" of Salmon Fisheries have had many a grievance in the past to contend with, but from the latest evidence it would seem that the future of the salmon is as yet undreamt of. With proper care of the fish itself, by due attention to the salmon rivers, by the removal of barriers to the upward passage of the salmon, and, above all, by the interdicting of the practice of river-poisoning by manufacturing nuisances, we may produce salmon in our markets as cheaply and as plentifully as herrings. Mr. Young, one of the legal guardians of the salmon and its interests, for example, gives us some interesting information respecting the natural and artificial barriers to the ascent of salmon. Many lakes (*e.g.*, Loch Tay, Loch Shiel), which might be stocked with sea-trout and salmon, are tenantless, because the conformation of the river-course prevents the upward passage of these fishes. The erection of "salmon-ladders," by means of which these fishes are enabled to pass even perpendicular rocks of considerable height, has successfully opened up some rivers before inaccessible to the fishes, and has, in the words of the commissioners, "created" a valuable salmon-fishery. A sore point with the salmon-guardians is the presence of mills and manufactories with their innumerable pollutions; and the fact that such sources of impurity are removable without injury to the manufactories, points out a remedy for the evil—for an unnecessary evil it unquestionably is. But legislation and public opinion are together tending in the direction of improvement in this matter, and when the day of the pollution of rivers has passed away, it may be safely said that the salmon-millennium is nigh at hand.

The delights of salmon-fishing, the hooking of the monster, the excited chase, and the capture, after, it may be, many a long mile of "play," are known only to the initiated and the expert. But there are other scenes in the life of the salmon not unmingled with the poetic, and which at present rise to our mental view. The scene is a long stretch of sandy shore on the Frith of Forth: the time is evening, with a setting sun fast disappearing behind a bank of clouds, and throwing a fiery effulgence over land and sea. There, seawards from the very door of the salmon-fisher's hut, runs a long line of nets

supported on huge poles, and throwing itself here and there into huge pockets, in which the finny prey is enticed, bewildered, and finally captured. The tide is receding, and the salmon-fishers, in huge jack-boots, wade to the furthest limits of the shore, and then, as they merge into deeper water, push off for the nets in their flat-bottomed "cobble." Soon they reach the first of their great net-pockets; and one unwinds a man-hole in the nets, and enters the pocket, wading about in his great boots, and armed with a net borne on the end of a stout pole. Cautiously he feels his way about, groping with the net around the latticed den, like a hunter seeking some agile quarry. Splash—there goes a tail-fin! The net has touched the fish, and now begins the chase in earnest. Slowly the fisher careers round and round the pocket, until at last he presses his prey into a corner of the huge purse. The contest of man and fish now begins. Sloping his net, the fisher contrives to edge his fish into it, and cautiously shifts fish and net, still under water, nearer and nearer to the man-hole at which the cobble waits. Now comes the tug of war. The net is lifted suddenly; the great fish is in its toils, but it is as much as the man can do to grasp the net itself, and lift it so that his neighbour may seize the great glittering fish, and with a merciful blow on the back of the neck send it painlessly to the shades. A grilse and other salmon follow; and as the last pocket is emptied of its contents the cobble is pretty sorely laden, and has to be fastened far beyond its former anchorage, whilst its owners carry the rich spoil of the sea homewards.

The sun has meanwhile gone down, and the night drawn on apace. The salmon yonder are being packed in boxes, and the rich green fronds of the bracken serve them for shrouds. To-morrow, when you hie homewards to town, the silvery fishes will accompany you. You shall see them laid in state on the fish-monger's cool iced slab; and if perchance you receive an invite to dine with some magnate of the land, you will mayhap feast right royally on the very "king of fishes" you saw captured whilst the sun was setting on the sea-shore, by the ruined castle and the fisher's hut. But whenever a salmon graces the board, I pray you, say grace right thankfully for the rich feast provided for you by the monarch of the sea.

POPULAR PAPERS ON ENGLISH LAW.

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THE DEAD PLEDGE.



HE above heading may read somewhat like the title of a romance, but it refers to nothing more romantic than a *mortgage*. The consideration of this legal document may appropriately follow (for the reasons presently to be seen) the simple explanation of a conveyance given under "Signed, Sealed, and Delivered," in the June number of this Magazine. First, let me attempt to show, by an

every-day illustration, what a mortgage is, as a legal definition would here be useless.

Returning for a moment to the case supposed in my last paper, let us take the price at which you agreed to buy your house and land at £1,500. You may, perhaps, have this sum ready on deposit at your banker's, and then you have only to hand it over to the vendor, as already assumed, and enter into the enjoyment of your purchase. Supposing, however, that you have only £500 in ready money, and it is of great importance