

## LAND-LOCKED SALMON IN B. C.

*[From The Field.]*

SIR:—Last year I spent six or seven months in the Kootenay district, that hitherto almost entirely unknown, most easterly portion of British Columbia, close to the Rocky Mountains, which form the boundary line between that Province and the north-west. I here became acquainted with the following details, which perhaps, from a ichthyological point of view, are of some interest: Kootenay Lake, a beautiful mountain tarn, surrounded by high snow-peaked ranges, some eighty miles long and of great depth, is full of salmon, which, to supply the pot of a hungry camp, we caught one night almost, say, by the hundredweight; the largest that tested our lines being fish of between 20 lb., and 25 lb., the average weight about half that. Strange to say, these fish, as perfect salmon as you could find anywhere, were perfectly land-locked ichthyological curiosities. To make myself understood, the following geological facts must be remembered. The Kootenay River has its source in the main chain of the Rockies, and after a course of 400 miles, it flows into the Kootenay Lake. This lake, while leaving numerous feeders in the shape of mountains torrents, has but one outlet, up which, however, salmon cannot get, for this outlet is a stream or rather mountain torrent, with high falls in it, the highest being quite 40ft., in sheer altitude. It empties into the Columbia river. The Columbia, where annually (at its mouth) from 15,000,000 lb to 35,000,000 lb of salmon are caught, is for its whole length, (1100 or 1200) miles free of falls insurmountable by salmon, the highest, the world-famous Kettle falls, being 24ft. in height, and I believe the highest falls on record that are known to be leapt by these fish. Salmon, therefore, ascend the entire Columbia, and fill, when the water recedes, the tiny Upper Columbia lake, the only source of this great river, with masses of dead fish, a great attraction for all the bear in the surrounding country. This brings them however, no nearer to Kootenay Lake, where their existence is so extremely puzzling, and which was a standing matter of discussion in our party, among whom there were two fishermen of great experience; one an English officer, who has plied his rod over some of the most famous salmon waters.

The one explanation we could offer at the time, that the outlet of Kootenay lake was once without insurmountable falls, is far less tenable than the other one, across which I stumbled in about the last place in the world the reading room of the British Museum. The Kootenay river, after flowing about a hundred miles through great canyons and deep gorges, overshadowed by those as yet unascended giants of the northern Rockies—Mount Murchison, Richardson, and Tefroy (about 14,000ft. reported altitude)—approaches at one point the Upper Columbia lake to within one and a half miles, the intervening strip of land being an apparently perfectly level stretch of sparsely timbered meadow land. I say apparently level, for in reality there is, as we found, a difference of more than twenty feet between the surface of the little lake and the higher Kootenay river, which, after approaching to within this short distance, turns off sharply,

again to pursue its first southerly, then again northerly, then again southerly course to Kootenay lake, and down the outlet, to join, after an apparently perfectly needless journey of some four or five hundred miles, the waters of the Columbia, which it had approached to almost rifleshoot distance. Strangely to say, this one mile and a half strip of land between the two waters—one having unbroken communication with the Pacific Ocean, the other not—is the key to this mystery, in so far as it shows how salmon got into Kootenay lake. At present this strip is high and dry, and shows but little signs that water ever flowed over it—a fact of which it is difficult to find any record, for the country about this spot was, up to last year, entirely uninhabited by white men, and the Kootenay Indians, lords of this most lovely of spots, did not know, or would not know, of any such overflow.

To make it worse, travellers have strangely neglected this spot; and the few who have crossed the Rocky Mountains into British Columbia did so by the old Hudson Bay trail, two hundred and fifty miles to the north of this spot. Not even that most painstaking and intrepid of explorers, David Douglas, who was twice sent out to Columbia river by the Royal Horticultural Society, reached the source of the mighty Columbia.

Were it not for the meritorious missionary father, De Smet, one of the boldest explorers we have had, who, in 1841, left France to found the Oregon missions among the Indians of the Pacific coast, the above problem would probably remain unsolved. De Smet, who died only a few years ago, left three little volumes of letters behind him, one of them giving a detailed description of the upper Kootenay country, which he describes, and not without some right, as a paradise-like region. He mentions the fact that the upper Columbia lake receives a portion of the Kootenay (or, as it then was called, Ares-a-plats) river water during the spring freshets which occur in June and July, when salmon are swarming up the Columbia in millions; and hence at some time or other, probably not so long ago, some salmon, more adventurous than the rest, stemmed the current flowing over this one-and-a-half-mile strip of ground during a particularly big freshet, managed to get into the Kootenay river, and thence down into the Kootenay lake, where they have increased, and have retained all the characteristics that make a salmon a salmon, except their wonted annual return to their briny element. The fish whose delicious flaky cuts furnish us daily "grub" for months were descendants of salmon, who travelled "overland" in a manner reminding one of Munchausen's tales, could the facts here mentioned be not so easily mentioned.

I have two views of this strip of land in its present condition, which, with the Government map of British Columbia, can be seen by anybody interested in this matter.

## NUMBER TWO.

SIR:—Since writing upon the above subject, several inquiries have reached me concerning the spawning season and spawning places of these salmon in Koot-