21st October 1920.

Wm. A. Found, Esq.,

Ottawa.

Dear Mr Found;-

In the October number of the Canadian Fisherman you will probably find an article on the "Oregon Fish Commission's Rearing Pond System" which I wrote after a visit I made to the Bonnieville hatchery last month.

The ground covered by this article will show something of the accomplishments of the rearing pond system as compared to that formerly employed. Two outstanding facts have been proven by the Oregon authorities. First, contrary to the expectations of some upholders of the older system, and notwithstanding that the past summer was the warmest experienced for many years, young sockeyes were held without loss through June July and August, and are healthy, active and vigorous to-day. And second, the percentage of adult fish returns from salmon held in rearing ponds is very much larger than the BEST results ever obtained under the system which turned the fry adrift after the absorption of the egg sac.

To the points made in your letters of the 25th & 27th ulto., I would reply as follows;-

"Barren" lakes as rearing ponds.

From what I can gather there is but little hope of these lakes proving important factors in artificial propagation work. In the first place they are very limited in number; - near Harrison hatchery Hicks Lake seems the only suitable "barren" lake - while most sockeye spawning areas have no "barren" lakes whatever in their vicinity. For such areas some other system must be adopted.

In the second place the fact that young salmon are cannibalistic makes it impossible to retain fingerlings and fry in the same waters simultaneously. The Oregon authorities, who at first favoured the "barren" lakes plan, now oppose it for this reason. Mr Robertson too recognizes this and proposes to only use each lake every alternating year so that the fingerlings may pass out before new fry are planted. This would mean two sets of barren lakes, and even around Harrison it is doubtful if a sufficient number are available. Here again however, the experience of the Oregon authorities is against the plan as they have found that all young sockeyes do not leave the lake in their second year; some remaining until their third. They would therefore destroy two years plantings of fry. As a result of their observations Oregon is abandoning all attempts at lake plantings and are confining their efforts to rearing pond propagation.

W. A. F. #2.

Establishment of rearing ponds.

While "barren" lakes are not available in the vicinity of most sockeye spawning areas, the lay of the land in practically every spawning district in the province will permit rearing pond construction. There would be no great engineering feats involved, nor would it entail any great expense. The cost of a pond for holding 2,000,000 sockeye fingerlings would, I believe, be less than the fishway from Hicks Lake is going to cost.

All salmon spawning beds are in comparatively level stretches of creek bottoms. Where such creek bottoms are comparatively level, so also is the ground adjacent to the creeks. To make rearing ponds in such localities all that is required is to build a small dam at the intake to secure sufficient head and to regulate the water supply. Then, parallel to the main stream, make a shallow trench so as to lead the water in the direction required. The flow and force of the water will widen and deepen the new channel until it assumes the proportions desired. There is but little manual labour involved and nothing requiring expert engineering knowledge. In Oregon all the work was done by hatchery labour, without engineering advice, and the results are most satisfactory.

In your letter of the 27th ulto., you say;- "In connection with most of our hatcheries in British Columbia it would be, to say the least, an extremely difficult undertaking to provide satisfactory retaining ponds." As pointed out in the preceding paragraph this is a mistaken idea, but even if true it would be better and cheaper, in the long run, to abandon your present locations in favour of ones that would be suitable.

But the point I wish to emphasize is that artificial propagation wants to be undertaken on more than 1,000 streams in B. C. that at present are being absolutely neglected. It particularily wants to be done on the "upper" Fraser watersheds that in 1921 will get sockeye runs, and which will not again benefit from natural propagation until 1925. What is needed to re-establish our fisheries by artificial propagation is to build up those areas that are most depleted, i.e., those areas that to-day have no hatchery support of any description. Instead of striving to find suitable rearing pond sites at Harrison, Birkenhead, Pitt, and other hatchery locations west of the Fraser Canyon, I believe the Government should ascertain what suitable locations could be had on the Thompson river watershed, at Quesnelle, Chilcotin, Nechaco, Fraser and Stuart lakes. Then when these places are located, start your propagation work on these sites, and where necessary bring from outside points the eggs required to operate such plants to their utmost capacity.

Yours very truly

HD/P.