Appendix IV

Miscellaneous abnormalities observed in Yukon River fish between 1999 & 2002

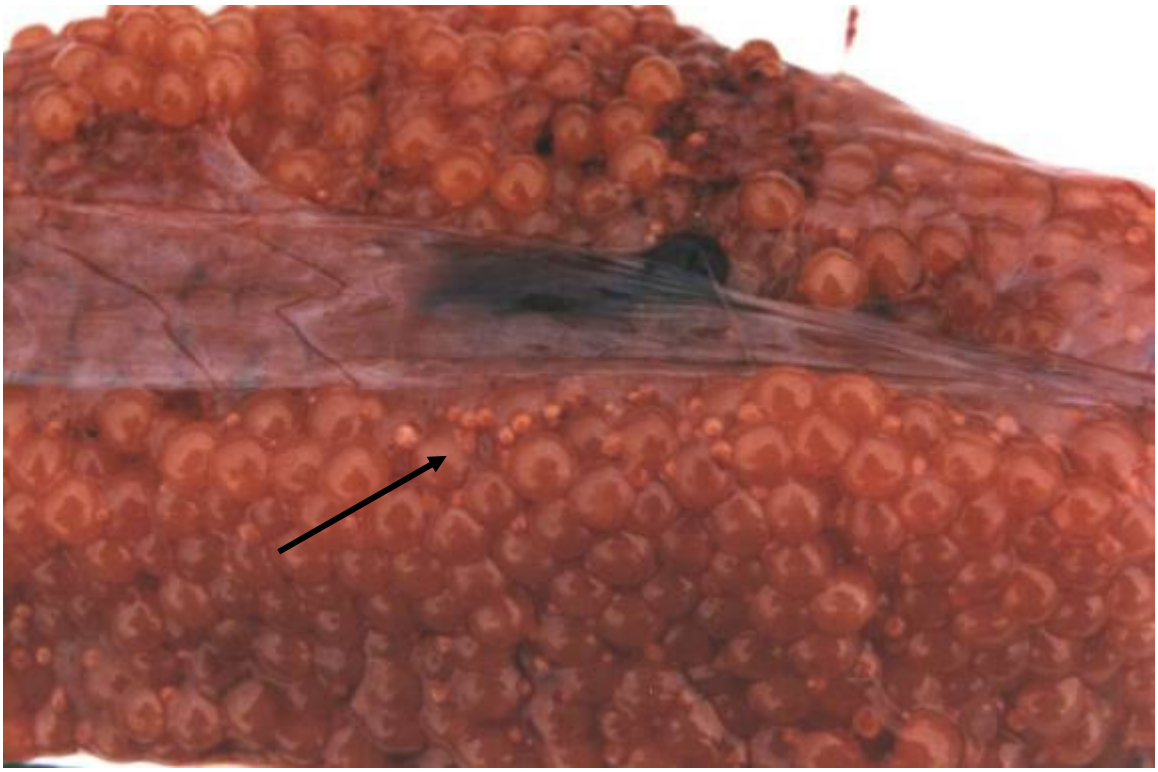

photo by R.Kocan

Attritic eggs found in up to 25% of Yukon River female chinook salmon examined between 2000 and 2002. The cause of this phenomenon is unknown but does not appear to be the direct result of infection by *Ichthyophonus*, however it could be a secondary response to infection.

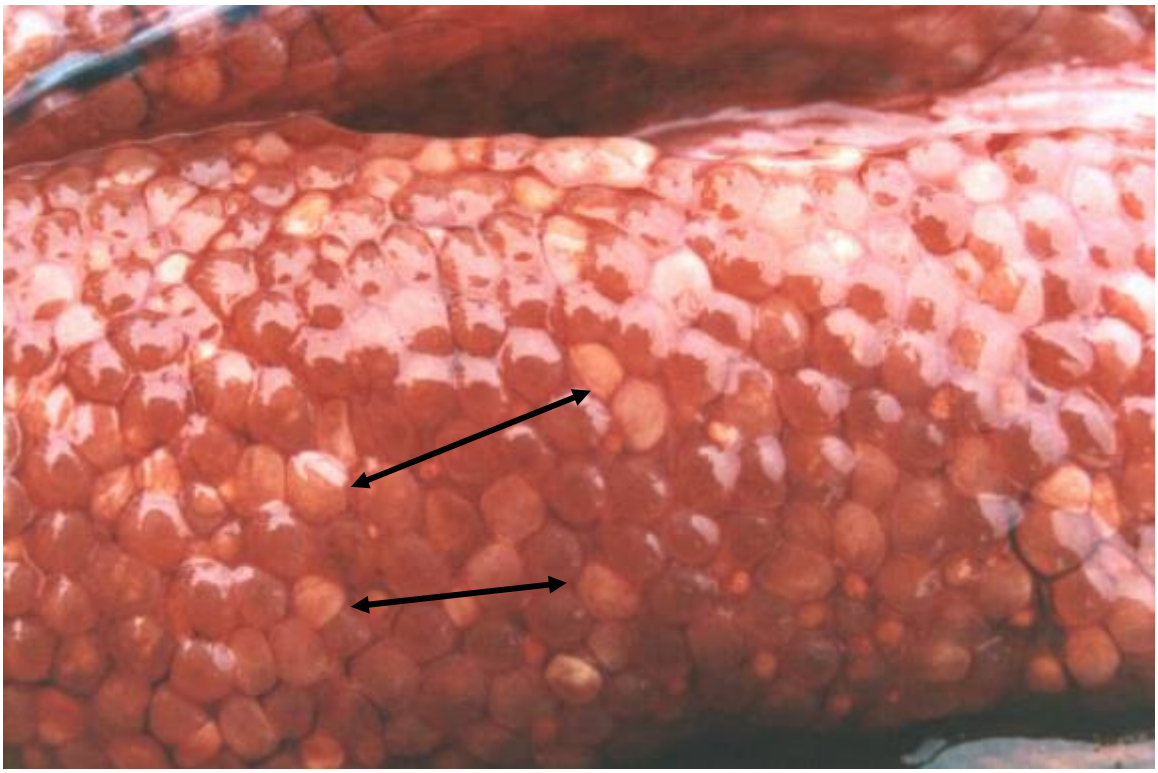

photo by R.Kocan

Collapsed white ova from Yukon chinook sampled at Rampart Rapids in 2001. *Ichthyophonus* was not isolated from or identified in the skeins, but as many as 25% of females exhibited this condition.

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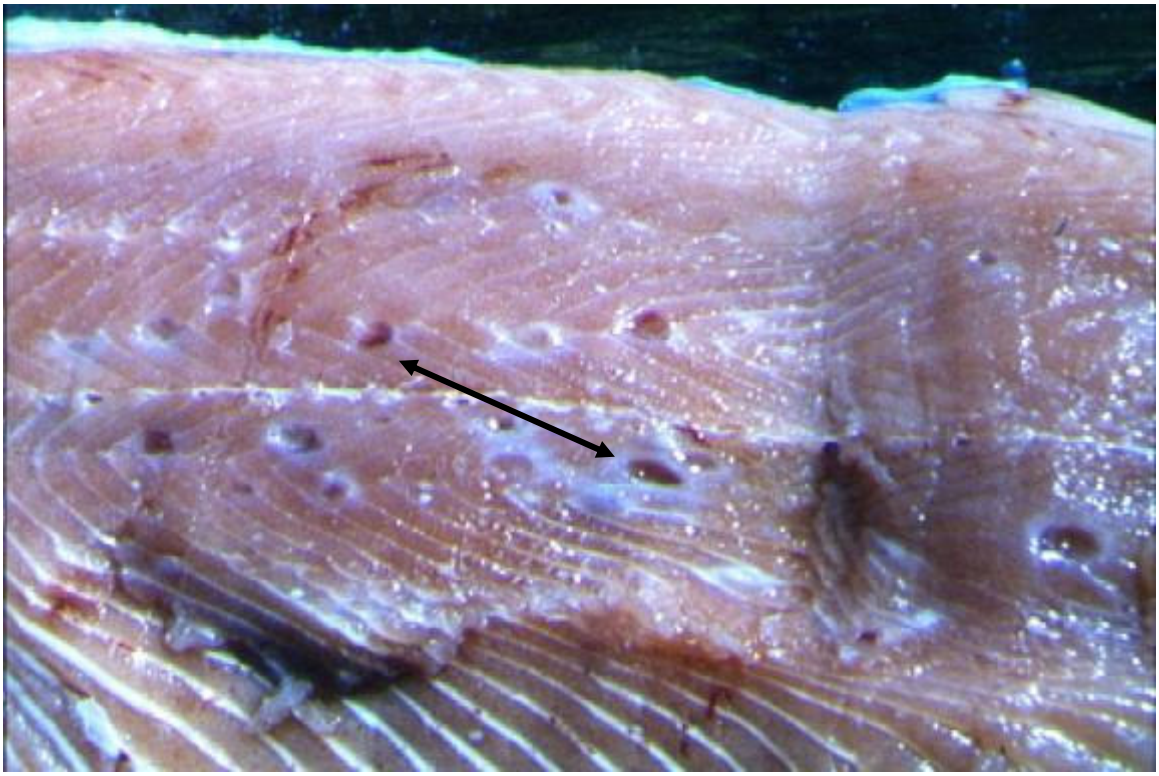

photo by R.Kocan

Ulcers in skeletal muscle of Yukon chinook caused by *Henneguya* sp. (caught at Rampart Rapids, river mile 730 in 2001)

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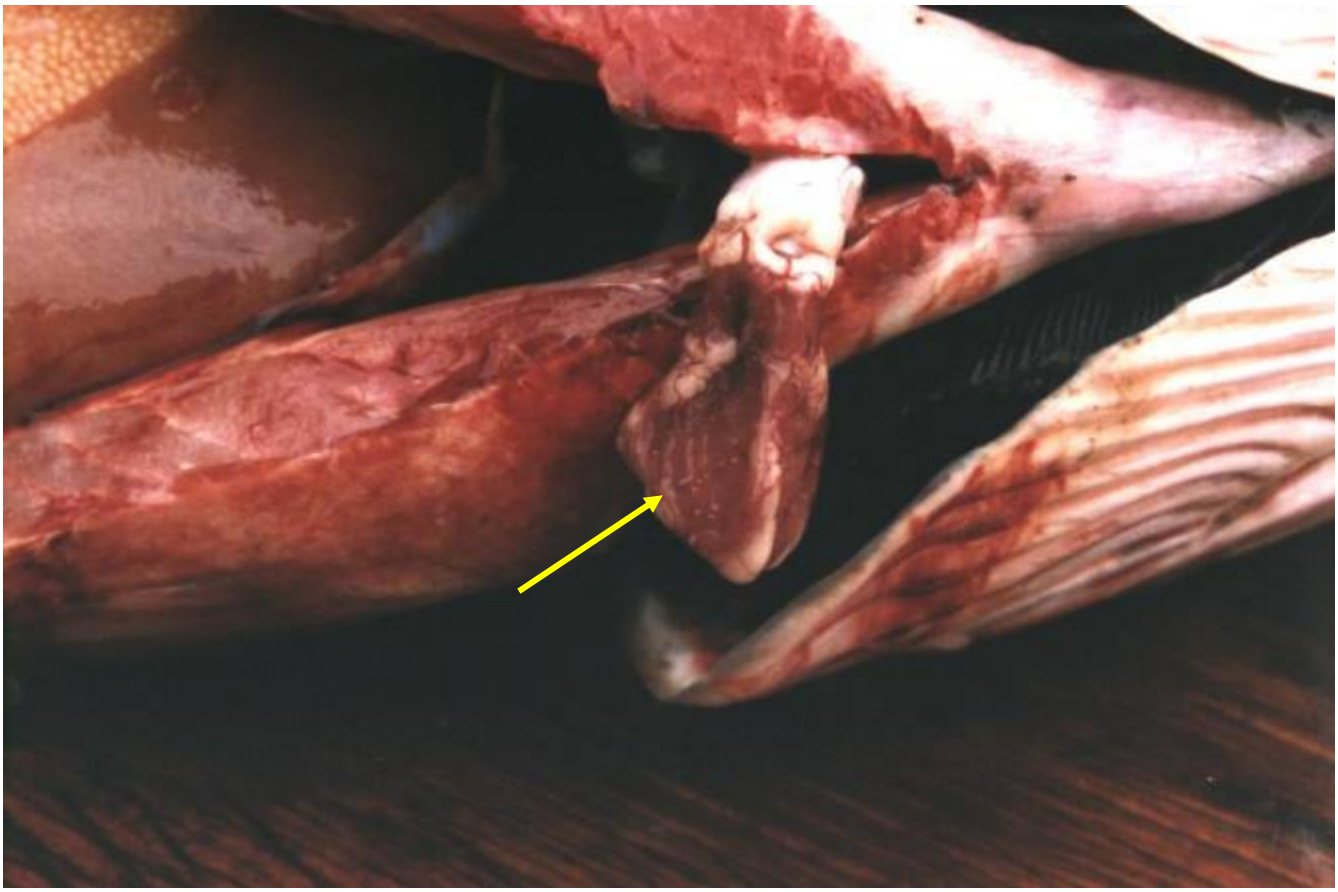

photo by R.Kocan

Heart from Sheefish (Inconnu) showing white spots on surface resembling *Ichthyophonus*. These do not occur within the cardiac muscle, do not grow in culture and are histologically distinct from *Ichthyophonus*. Similar lesions were also found in broad and humpback whitefish.

photo by R.Kocan

Healing lamprey bites; common on migrating adult chinook salmon sampled along the lower and middle Yukon River.

photo by R.Kocan

Severe damage to the skin and underlying musculature of adult chinook salmon caused by previously being caught in a gill net. Sampled at mouth of Tanana River (river mile 695).

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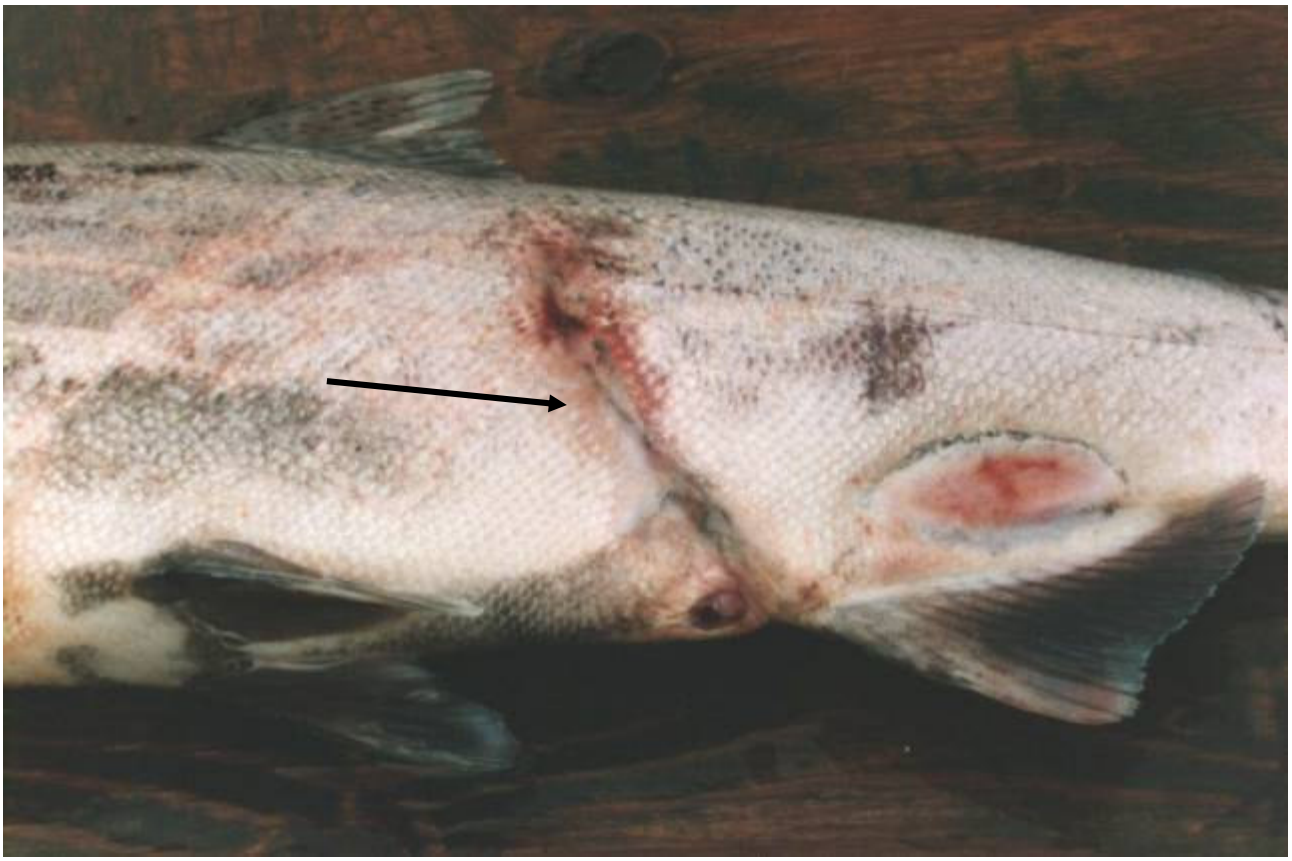

photo by R.Kocan

Frequently seen healing "gash" running from lateral line to vent of adult Yukon Kings. Cause unknown.

Appendix IV

photo by R.Kocan

Fresh muscle biopsy (top) and healed biopsy (bottom) after 72 hours. Punch diameter is 1/4 inch and removed tissue is weighs 0.5 gm.

Bacterial "tumor" in skeletal muscle of Yukon chinook salmon seen as swollen area on flank of whole fish (top) and ulcers in skeletal muscle (bottom). (Tanana North Shore; 2003)