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August 23, 1985

Mr. Arnold Howe
Commonwealth of Massachusetts
Division of Marine Fisheries
449 Route 6A
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Dear Arnie:

I have examined all the slides prepared from the hepatic tissues you collected on your recent spring, inshore survey (GLORIA MICHELLE) in Massachusetts' coastal waters. In all there were 71 livers processed for histopathological examination, 46 were from winter flounder, 13 from yellow-tail flounder, 4 from windowpane flounder, 3 from American plaice, 1 from witch flounder, 1 from summer flounder and 3 from tautog.

No lesions of significance (those that could be reasonably interpreted as detrimental to the health of the fish) were noted in any of the yellow-tail flounder. As you can see from the notes I sent earlier, histologic lesions in yellowtail livers included inflammatory foci (presence of leukocytes) in the hepatic parenchyma (hepatitis), around bile ducts (pericholangitis) and around hepatic veins (vasculitis). One fish had probable hyperplasia (increase in number) of MMC (melanomacrophage center) and one had inflammation of the hepatic capsule.

One of the 4 windowpane had a probable basophilic focus. I have already discussed the significance of this lesion with you (in tom cod). I should note that basophilic foci are routinely seen in windowpane but to date no hepatocarcinomas have been detected (hepatocellular adenoma is the most significant neoplasm seen in windowpane).

American plaice, witch flounder, summer flounder, and tautog were essentially unremarkable.

Lesions noted in the 46 winter flounder examined included: focal and multifocal parenchymal necrosis (33%), focal and multifocal hepatitis (30%), pericholangitis (26%), MMC hyperplasia (22%), vacuolar cell foci (=RAM cell) (17%), and vasculitis (11%). Two fish (44%) had basophilic foci and one fish (2%) had a hepatocellular adenoma (possible hepatocarcinoma).

Of the 46 winter flounder examined, 24 were from station 56 (Clark Cove, New Bedford), and 5 were from station 8 (Duxbury). The remaining 17 fish were from stations 18, 19, 22, 23, 33, 50, 59, 60, 76, 79, and 85. '88

Lesions in the flounder from Clark Cove included: focal and multifocal hepatitis and necrosis (both 42%), vacuolar cell foci (25%), pericholangitis (25%), and vacuolar cell foci (25%). Lesions in the five flounder from Duxbury included: focal and multifocal hepatitis and necrosis (2 each) and pericholangitis (2). One fish had a basophilic focus and one had hepatocellular adenoma (less conservative diagnosis might be hepatocarcinoma).

The hepatic parenchymal cell necrosis present in the Clark Cove flounder is consistent with the action of a hepatotoxin. Further, the presence of a cell type in the necrotic foci with cytologic characteristics of the neoplastic cells seen in Boston Harbor winter flounder suggests that further histopathologic studies of the New Bedford flounder are warranted.

Again, many thanks for your help in obtaining this informative collection of fish livers. I look forward to examining additional fish from the New Bedford area.

Sincerely,

Robert A. Murchelano
Chief, Fish Pathology Investigation

cc: A. Rosenfield
✓ H. Creel