

CORRIGENDA

Please Note the Following Changes to the Scientific Program

CONCURRENT ORAL SESSIONS:

MONDAY

HISTOPATHOLOGY SPECIAL SESSION, SESSION 8 (page 32)

Addition: 1700: W.E. Hawkins *et al.*, **Background neoplasms in Japanese medaka**

TUESDAY

PARASITOLOGY 2, SESSION 13, (page 38)

Cancellation: 1345: O. Palenzuela *et al.*, **Investigations in the life cycle of *Enteromyxon spp.* (Myxozoa). A two-host cycle?**
No Replacement

WEDNESDAY

PARASITOLOGY 4, SESSION 20 (page 46)

Cancellation: 1130: A.V. Kazarnikova and H.V. Shestakovskaya, **Ecology and faunistic characteristics of sturgeon parasites from the Azov sea basin**

Moved: from 1145 to 1130: F. Morado, **Parasitic diseases of North Pacific wild fish and shellfish: Do life history patterns of host mortalities exist?**

Replacement: 1145: I. Ridgway *et al.*, **Post capture muscle necrosis in the Norway lobster, *Nephrops norvegicus*, and its physiological consequences**

APHANOMYCES SPECIAL SESSION, SESSION 21 (page 47)

Cancellation: 1045: H. Kator, *et al.*, **Environmental factors associated with the occurrence of ulcerous lesions in Atlantic menhaden, *Brevoortia tyrannus*, in a small coastal embayment**
No Replacement

MISCELLANEOUS 2, SESSION 27 (page 53)

Cancellation: 1530: R. Kocan, *et al.* **Effects of *Ichthyophonus* on survival of Yukon River chinook salmon**

Replacement: A. Goodwin, *et al.* **First reports of spring viremia of carp (SVCV) in wild and captive North American cyprinids**

THURSDAY

IMMUNOLOGY 1, SESSION 28 (page 55)

Cancellation: 1030: S. Kaattari. **Role of somatic mutation and immunological structural diversity in the teleost immune function: A critical problem in addressing fish disease resistance**
No Replacement

IMMUNOLOGY 2, SESSION 31 (page 58)

Cancellation: 1415: N. Lorenzen, *et al.* **Neutralization of a salmonid rhabdovirus by single-chain antibodies**

Replacement: R. Cusack, *et al.* **Experimental exposure of juvenile Atlantic cod, haddock, and Atlantic halibut to Nodavirus isolated from Atlantic cod and haddock and the effects of cross-infectivity**

POSTER SESSION:

Cancellations: Poster 44. D.H. Lewis and C.J. Bridger **Health management for offshore aquaculture of red drum**

Poster 56. S.K. Düğenci, *et al.*, **Some medicinal plants as immunostimulants for fish**

Additions: Poster 99. A.B. Olsen, *et al.* **Mortality in Atlantic salmon (*Salmo salar*) sea-reared smolt associated with infection by *Rhodococcus erythropolis***

Poster 100. A.B. Olsen, *et al.* **Septicaemia, dermatitis, and panophthalmitis in Atlantic salmon (*Salmo salar*) in Norway caused by a slow growing, halophilic *Pasteurella* sp.**

NEW ABSTRACTS:

ORAL:

Experimental exposure of juvenile Atlantic cod, haddock and Atlantic halibut to Nodavirus isolated from Atlantic cod and haddock and the effects of cross-infectivity.

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Johnson and others at the National Research Council in Halifax, Canada, discovered a Nodavirus in cultured juvenile Atlantic codfish. The affected cod showed typical nodavirus behavior such as looping and spiraling, as well associated degenerative vacuolative encephalopathy and retinitis. To investigate the possible source of the virus, wild cod broodstock held at a research facility were screened for nodavirus in the spring of 2002. A nodavirus was isolated on the SSN-1 cell line from these broodstock cod. A second nodavirus isolate was obtained from juvenile cultured haddock which died in the summer of 2002. These fish also displayed classical neurologic symptoms and had encephalopathies. To test Koch's postulate and viral specificity, juvenile Atlantic cod, haddock and Atlantic halibut were exposed to both cod and haddock isolates at various dosages. In this experiment, 0.025ml of viral culture was injected intramuscularly. Negative controls were injected with uninoculated cell culture media. Significant mortalities were associated with cod injected with the cod nodavirus, haddock injected with the haddock nodavirus, cod injected with the haddock nodavirus and haddock injected with the cod nodavirus. The associated pathologies will be discussed along with the potential affects on cod stocks.

First reports of spring viremia of carp virus (SVCV) in wild and captive North American cyprinids

Goodwin, Andrew E.^{1*}, Audrey Dikkeboom^{2*}, Craig Radi², Kathy Kurth², Sue Marcquenski³, Keith Way⁴, and David M. Stone⁴

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Spring viremia of carp (SVC) is a rhabdoviral disease most prominent in common carp (*Cyprinus carpio*) raised in Europe, but also isolated in South America and the Middle East. The US has diverse populations of wild cyprinid fishes and a large cyprinid fish industry, but SVC virus has never been reported on the North American continent. In April of 2002, an epizootic of SVC occurred on a koi (*Cyprinus carpio*) farm in the Eastern U.S. The farm is a major wholesale distributor of koi and goldfish with customers throughout the U.S. Control and eradication of the disease will be difficult because of the geographic range of these customers and because ponds on the farm drain into several rivers that are used as the water supply. In spring 2002, a second apparent outbreak of SVC disease occurred in Cedar Lake, Wisconsin, a 500 ha lake more than 2000 km from the infected farm in the Eastern U.S. Some 10,000 kg of wild common carp died. There is no evidence of any direct link between Cedar Lake and the SVC case in the Eastern U.S.

Nucleotide sequence information, from a 495 bp region of the viral RNA coding for the SVCV glycoprotein amplified by RT-PCR, demonstrated that the two isolates were 98.78% similar to each other and that the Wisconsin isolate is 97.98% & 98.18% similar to isolates recently obtained from fish exported to the UK from Asia. The isolates are only 88% similar to European strains.

Background neoplasms in Japanese medaka (*Oryzias latipes*)

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Several small fish species are good candidates as models for identifying carcinogens and investigating carcinogenic mechanisms. One such candidate is the Japanese medaka (*Oryzias latipes*). Medaka are tolerant to laboratory conditions and are generally assumed to have a very low incidence of background neoplasms. Several histopathologic evaluations to identify the rates of occurrence of background neoplastic lesions in medaka have been performed in our laboratory. The most common neoplasms occur in the liver as hepatocellular adenomas and carcinomas and in the gonads as germ cell neoplasms, seminoma-like tumors of the ovary or testis. A life span study of medaka, in which specimens were periodically sampled and examined histologically, was conducted. A lymphosarcoma was the first neoplasm observed and it occurred in a medaka that died at approximately 11 months into the study. The first liver neoplasms occurred in fish that were sacrificed at 15 months and the first germ cell neoplasm in the testis of a medaka sacrificed at 12 months. Overall, there were few significant lesions that occurred before 12 months into the study. As the medaka lived beyond 12 months, low numbers of neoplasms occurred in the liver, gonads, thyroid tissue, spleen and pericardial cavity. Under the conditions of this study the life span of the medaka was approximately 24 months. This study confirms the expected low rate of spontaneous neoplasia in medaka and further supports its use in carcinogenesis studies, especially in low dose studies in which background rates of neoplasia determine the statistical sensitivity of the tests.

Post-capture muscle necrosis in the Norway lobster, *Nephrops norvegicus*, and its physiological consequences.

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A post-capture, abdominal muscle necrosis of rapid onset has been identified in Norway lobsters, *Nephrops norvegicus* (L.), captured off the West coast of Scotland. Affected animals show signs of this condition within hours of capture, and usually die within days. The time-course of this necrosis, from the whitening of individual fibre bundles of the abdomen to a complete opacity of the abdominal musculature has been characterised using an index of progression. The pathology, which involves a condensation of myofibrils and an infiltration of necrotic regions by granulocytes, causes a loss of the normal tail flip swimming in this species. The condition most closely resembles idiopathic or spontaneous muscle necrosis, a pathology previously reported

from both wild and cultured crustaceans. Damage to the integument in conjunction with exposure to various stressors both during and immediately after capture is its most likely cause. The physiological responses of the lobsters to development of muscle necrosis have been determined through changes in abdominal muscle glycogen, blood glucose, and lactate concentrations. The relative effects of trawling stress and post-capture aerial emersion time on these parameters are also being examined. The rapid onset of the pathology has implications for the post-capture handling procedure for *N. norvegicus* and their subsequent vivier (live well) transportation to market. It may also be partially responsible for the high mortality rate of undersized *N. norvegicus* returned to the sea (discards) following their capture and aerial emersion.

POSTERS:

99. Mortality in Atlantic salmon (*Salmo salar* L.). Sea-reared smolt associated with infection by *rhodococcus erythropolis*

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After one month in sea water, late autumn 2000, Atlantic salmon smolts of 150 g started to die. The post mortem findings indicated septicaemia. All fish also had chronic vaccine related peritoneal adhesions. Histopathology revealed a systemic infection with gram positive rods. The bacteria were especially numerous in association with the chronic vaccine related peritonitis. Gram positive rods were isolated by cultivation from all fish examined. The bacterium isolated is not acid-fast, cytochrome oxidase negative and catalase positive. Growth at 30°C is preferred to 22°C and 37°C. Growth is inhibited by the addition of NaCl. On the basis of the phenotypic and genotypic characterization performed so far the bacterium may be identified with a reasonable degree as *Rhodococcus erythropolis*. The source of the infection is not identified. To our knowledge this is the first report of clinical disease in fish associated with *R. erythropolis*. Transmission experiments will be performed in order to fulfil Koch's postulate.

100. Septicaemia, dermatitis and panophtalmatitis in Atlantic salmon (*Salmo salar* L.) in Norway caused by a slow-growing, halophilic *Pasteurella* sp

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A sea farm with Atlantic salmon of 0.5-2 kg on the West Coast of Norway experienced increased mortality from September 1999 to March 2000 with a peak in November. The main gross pathological findings were haemorrhages, skin ulcers and eye lesions. Histopathological examination revealed gram negative bacteria associated with necrosis and/or inflammation in gill, eye, skin, skeletal musculature, liver and kidney. From lesions were isolated a bacterium preliminary identified as *Pasteurella* sp. The bacterium is slow-growing and halophilic. It is very similar but not identical to the causative agent of "varracalbm" and *Pasteurella skyensis*.