

A SANGUINICOLID BLOOD FLUKE IN SEA BASS
(LATES CALCARIFER BLOCH)
IN COASTAL PENINSULAR MALAYSIA

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- u - uterus
- ue - uterine egg
- μ - micrometre
- v - vitellaria
- vd - vitelline duct
- vr - vitelline reservoir

LIST OF ABBREVIATIONS

ant. - anterior
c - caeca
ci - cirrus
co - anterior commissure
cp - cirrus pouch
EGC - eosinophilic granular cell
F. - female genital pore
FCR - food conversion ratio
fp - female pore
g - gland cells
M. - male genital pore
m - Mehlis' gland
MMC - melanomacrophage centre
n - nerve canal
o - ovary
oe - oesophagus
ov - oviduct
oo - ootype
PER - protein efficiency ratio
post - posterior
s - sperm
sd - sperm duct
sp - spine
sv - seminal vesicle
t - testis
u - uterus
ue - uterine egg
 μ - micrometre
v - vitellaria
vd - vitelline duct
vr - vitelline reservoir

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BLOCH) IN COASTAL PENINSULAR MALAYSIA**

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Cruoricola lates N. Gen., N. Sp. from the blood vessels of cultured sea bass (*Lates calcarifer* Bloch 1790) is described. It is a lanceolate sanguinicolid with a single column of submarginal, ventral spines; extensive vitellarium; and X-shaped intestine. The single, lobed testis extends laterally to the caeca. The cirrus lies dorsal to the spherical seminal vesicle. Auxiliary seminal vesicle present. The uterus is post-ovarian, partly situated between the lobes of the ovary; mid-portion is thick. *Cruoricola lates* N. Gen., N. Sp. is found in all sea bass over 15g weight in the type locality, Pulau Ketam.

The adults of *C. lates* primarily inhabit the venous circulation of *Lates calcarifer*. Eggs were found in the kidney, liver, ventricle of the heart and gills of all fish examined three months after stocking.

Cruoricola lates eggs in tissues evoke a cellular immune response consisting of encapsulation by either activated macrophages and/or endothelial cells. In the heart this is accompanied by macrophage infiltration. In the kidneys, encapsulation of eggs is followed by pigment deposition in and around the capsule. The main foci of pathological effect are the pancreatic acinar tissue, head kidney, and intertubular caudal kidney tissue. *Cruoricola lates* egg deposition in these tissues may have a negative effect on growth through reduction in food conversion ratio and depression of immunological capability.

Haematological parameters (haematocrit, serum protein, plasma protein) were so variable that no relationship between them and infection with blood flukes could be described.

Cruoricola lates was present in sea bass culture sites sampled in Penang, Johore, Pahang and Terengganu. Kelantan sites appeared not to have high incidence of infection, probably due to the freshwater influence. Intensity and prevalence of infection appear to increase with intensity of culture.

Histological and dissection techniques are complementary in giving a comprehensive picture of the location of worms and eggs in the host. As *Cruoricola lates* is readily available, and as sea bass are easily maintained under laboratory conditions, there is wide scope for further studies on this worm and its relationship with the host.