D-45: Acquired immunity by common carp (*Cyprinus carpio* L. infected with *Dactylogyrus vastator*, Nybelin, 1924 (Monogenea : Dactylogyridae)

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Exposure of fishes to a parasitic or pathogenic infection often results in survivors becoming resistant to subsequent diseases caused by the same pathogen or parasitic organism. The piscine immune system is well developed and is normally quite efficient. Immunity represents a specific insusceptibility to a specific antigen (pathogen, parasite) or Immunity can represent a specific capability to respond to a specific antigen. Proteins of high molecular weight, polysaccharides or lipids of parasite origin act primarily as antigens to stimulate the formation of specific antibodies (immunoglobulins) in the serum or in other body fluids. Under the influence of antigenic stimulation, the organism acquires an immunity which always signifies an individually acquired state of resistive capacity against certain parasites, their metabolic products or against other substances. Although many metazoan parasites of fish have been studied in relation to their life-

cycle, pathogenicity or pathology, investigations on fish resistance mechanisms against parasite infections are sparse.

The carps used in this study were without any previously known history of *D. vastator* or any other parasitic infections. They were maintained in tanks at 17°C and the acquired resistance of *Dactylogyrus vastator* infections studied. The fish were acclimatized to their new environment before the start of the experiments. The naive fish were separated into two groups (experimental fish and control fish) for this experiment. One set of fish were subjected to infection with known previous *D. vastator* infection. The naive fish and experimentally infected fish were subjected to a formalin bath treatment at 180 ppm for an hour after the 10th week of the initial infection, to remove any parasites. After one hour, the fish were transferred to the experimental tanks and left for two weeks. After two weeks, 20 infected fish were introduced into each tank and after two weeks the introduced infected fish were removed. Samples of 20 fish were taken from each tank at the end of weeks 1, 3, 4, 5, 6 and the total number of *D. vastator* counted. After 5 weeks, blood samples were removed from fishes and the sera separated off and analysed by gel electrophoresis. Fish blood from naive fish was used as the control. This was used to show a clear difference between the infected and uninfected blood serum.

The changes in the *D. vastator* population were monitored over a period of time, the challenged fish differed abruptly from the control fish. The results showed a difference between infected and uninfected blood samples by gel electrophoresis as differing patterns of band separation. The bands of infected fish were found to show the bands corresponding to the molecular weight of 29.09, 30.91, 33.64, 35.45, 36.36, 37.27 and 39.09 KD.