CHEMICAL TRANSFER OF A DUMMY REACTION, RELEASED IN YOUNG MOUTH BREEDING FISH (TILAPIA NILOTICA) DURING THE "CRITICAL PERIOD", FROM IMPRINTED DONORS INTO UNIMPRINTED RECIPIENTS AFTER THE "CRITICAL PERIOD"*

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ABSTRACT

The "linking behavior" to the dummy, shown by young fish during the "critical period", appears to be transferable to unimprinted animals after the "critical period" by injection of brain extracts from imprinted donors. On the other hand, control recipients injected with extracts from unimprinted donors show no such orientation to the model. Following injection the behavior of the recipients was comparable with that of imprinted animals at an equivalent age. However, the high level of "linking behavior" manifested by the donor animals at the time of decapitation could not be transferred.

*This material was first presented in a dissertation by C. LANGESCHEID (Diss. Göttingen, 1972).
INTRODUCTION

During the past few years many experiments have been performed on the interanimal transfer of learned information. Although the evidence has met with some controversy, recent findings would appear to have established the fact that the chemical transfer of acquired information is a real phenomenon (e.g., UNGAR 1972, for a review see DYAL, 1971).

The present investigations were initiated to ascertain whether it was also possible to transfer a genetically controlled behavior pattern using injections of "antagonistic" brain material. Up until the present time, only three other experiments in this direction have been reported, all of which have yielded negative results: DYAL and GOLUB (1971) unsuccessfully attempted to transfer an inborn alcohol-preference from one strain of mice to another strain which had a spontaneous dislike for this substance. Similarly, the experiments of REINIS and MOBBS (1970), in which they tried to transfer the innate aggressive tendency of killer-rats to non-killer-rats, met with no success. Moreover, the reverse procedure also proved negative. In like manner, LAGERSPETZ (1971) was not able to transfer the "pacifying" factor from comparatively inactive mice to animals with a very high activity.

The present experiments were conducted with young mouth-breeding cichlids (Tilapia nilotica). In order to obtain a complete understanding of the results it is first necessary