

STATUS REPORT NASA PROJECT NASr-221

SUBJECT: Sixth Quarter Report for the period July 1, 1965  
to September 30, 1965

1. One shipment of fish was received from Africa and one quite large specimen was in excellent condition.

2. Four (4) glass aquaria were purchased and were fitted with acrylic plastic tops especially designed for oxygen consumption studies of fish.

3. A fish weighing 1 pound and 9 ounces was studied during a quiet but active state and on two separate 24 hour occasions his oxygen consumption was as follows:

(a) Run A - 26 hrs. and 20 mins. 88 ml

(b) Run B - 24 hours exactly 104 ml

This fish was subsequently forced into aestivation by removing the water from the tank. He succeeded in entering aestivation but with <sup>so</sup> a markedly enlarged air content of the system. Accurate oxygen consumption studies could not be taken of so large a fish. The fish survived two weeks of aestivation and then succumbed.

4. Four (4) large fish are currently in the process of enforced aestivation.

5. The final draft for a paper entitled "Oxyhemoglobin Dissociation Curve In The Blood Of Lungfish" has been transmitted to the American Journal of Physiology for publication.

6. In view of the remarkable and encouraging report of Axelrod at the Third International Symposium on Hybernation

of finding a hibernating property in crude extracts from the brains of the hibernating ground squirrel, we will soon enter intensive study of extracts of the brains of the 4 fish that are currently aestivating and of others to be imported. Other interesting and pertinent papers were given at this Conference which was attended by the principal investigator.

In summary, definite progress was made during the quarter and a lead has been obtained which promises a rewarding course of investigation.

Very respectfully submitted,

Henry Swan, Principal Investigator