

CONTENTS

	Page
List of tables.....	i
List of Figures.....	v
List of photos.....	viii
I. INTRODUCTION.....	1
AIM OF THE WORK.....	
LITERATURE REVIEW.....	5
II. MATERIAL & METHODS.....	27
1. Collection of fish spawners	27
A. i. Reproductive biology.....	27
ii. For histology.....	27
B. For laboratory experiments.....	28
2. Effect of environmental parameters on reproduction of <i>L. ramada</i> (injected and non-injected).....	29
1. Effect of temperature.....	29
2. Effect of photoperiod.....	30
3. Effect of salinity.....	32
4. Effect of injection with HCG.....	32
3. Induced breeding technique.....	33
1. Experimental design.....	33
2. Fecundity.....	34

4. Investigation of eggs and larvae in Lake Qarun.....	35
5. Food and feeding behavior of <i>Liza ramada</i> fry in Lake Qarun.....	35
1. Collection of mullet fry.....	35
2. Feeding behavior of mullet fry under experimental conditions.....	36
III. RESULTS.....	41
1. Reproductive Biology of <i>L ramada</i>	41
A. Maturity stages.....	41
i. For female.....	41
ii. For male.....	42
B. Gonado-Somatic Index GSI.....	44
C. Egg diameters frequency.....	47
2. Histological characteristics of the gonads.....	51
A. i. Histological characteristics of ovaries during oogenesis.....	51
ii. Monthly changes in the ovary during the breeding season.....	57
B. Histology of the testis.....	82
i. The classification of testis maturation stages.....	83
ii. Monthly changes in the testis during the breeding season.....	85
3. Effect of some environmental parameters on the gonads maturation of <i>Liza ramada</i> during the breeding season.....	105

A. Effect of some environmental parameters on the gonado somatic index of <i>L. ramada</i> during the breeding season.....	105
i. Effect of temperature on GSI.....	105
ii. Effect of photoperiod on GSI.....	106
iii. Effect of Chorionic Gonadotropin Hormone (CGH) on GSI.....	107
B. Effect of some environmental parameters on the egg diameter of <i>Liza ramada</i> during the breeding season.....	114
i. Effect of temperature on the egg diameter.....	114
ii. Effect of photoperiod:.....	114
iii. Effect of HCG injection on the egg diameter:.....	115
4. Effect of some environmental parameters on sex steroid hormone.....	123
i. Effect of temperature on sex steroid hormone.....	123
ii. Effect of photoperiod on sex steroid hormone ...	130
iii. Effect of salinity on sex steroid hormone.....	137
5. Induced spawning of <i>Liza ramada</i> :.....	144
6. 1. Investigation of ecthoplankton in Lake Qarun.....	147
2. Seasonal fluctuations mullet egg and other fish species in Lake Qarun.....	151
3. Distribution of mullet eggs in different stations.....	154

7. Feeding behavior of mullet fry in Lake Qarun	159
1. Consumption rate of zooplankton.....	159
2. Gut analysis of mullet fry.....	162
3. Feeding selectivity of mullet fry on Lake Qarun zooplankton in different times.....	167
i. Selectivity index.....	167
ii. Frequency indices.....	170
IV Discussion	174
V Summary	210
VI References	215
VII Arabic summary	