THE AGE, GROWTH AND MATURITY OF LABEO NILOTICUS, FORSK.

FROM THE NOZHA HYDRODROME IN 1968-1970.

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INTRODUCTION

The most important freshwater fish resources are no doubt attributed to fishes of Family *Cyprinidae*. Because of their great importance, the members of this family received extensive scientific investigations all over the world. However, in literature dealing with the biology of the different species of Cyprinidae, very little was made on the biology of *Labeo niloticus*.

Labeo niloticus Forsk. inhabits the River Nile and few other small Rivers of Central Africa (Boulenger, 1907). In the Nile, *Labeo niloticus* is one of the most common species of Family Cyprinidae, and plays an important role in the inland fisheries of U.A.R., constituting a considerable part of the catch. From the statistical point of view, the yield of Labeo species (mostly *Labeo niloticus*) represented about 24% and 18% of the total production of the Egyptian Nil fishery, in the years 1965 and 1966 respectively.

In the management of our inland fishery it is necessary to consider the basic informations on the growth-rate, age-composition and sexual maturity of our fishes in the commercial catch. These aim towards a better exploitation of the existing fishery.

The Nozha-Hydrodrome

All the materials were collected from the Nozha-Hydrodrome which was constructed, near Alexandria, during the second World War. The Nozha-hydrodrome is an isolated part of Lake Mariut (Fig.1) having an area of 504 hectars (1200 feddans) and a water depth of about six meters. It is regularly supplied with fresh water from the Nile through the Mahmoudiah Canal.

Before 1964, the presence of a high percentage of different species of carnivorous fishes affected the fish production of the Hydrodrome. Therefore the Hydrodrome was nearly drained, and extensive fishing operations were carried out during the period from 25 July, 1964 to 31 January 1965. The percentage of predators caught (Anguilla, Bagrus, Clarias and Lates) was about 36%, while the catch of *Labeo niloticus* was 1585 kgm and this represented 3.24% of the total fish yield of the Hydrodrome during that Period.

In 1966 and the following years, periodical commercial fishing has been carried out in the Hydrodrome. The catch of *Labeo niloticus* varies in the different fishing periods, but generally speaking, from November, 1966 to December 1969, the total catch of *Labeo niloticus* was 4555 kgm. This represented 1.83% of the total fish yield of the Hydrodrome in that period.

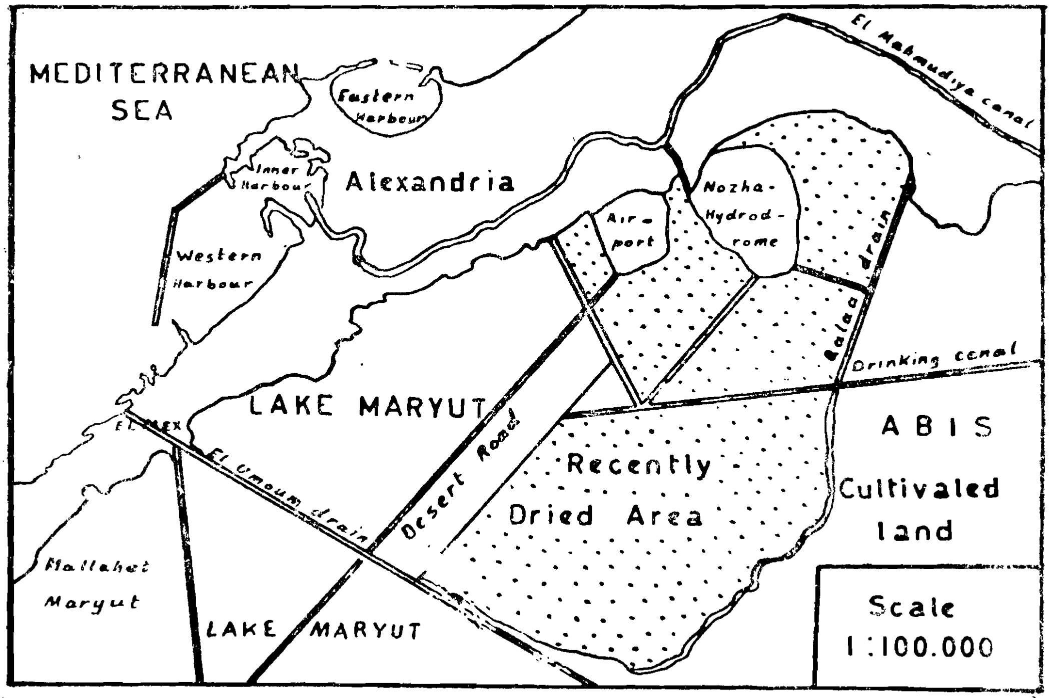

Figure 1 - Position of the Nozha-Hydrodrome

MATERIALS AND METHODS

All materials used in this study were obtained during two fishing periods, from October, 1968 till April, 1969 and from October, 1969 till March, 1970. Fishes were mainly caught by gill and trammel nets, with mesh sizes from 16 to 20 mm. The small fishes were obtained from the catch of seine nets.

For age determinations, the scales of 786 fish, ranging in total length from 12 to 63 cm., were taken from behind the pectoral fin, on the left side of the fish below the lateralline. The examination and measurement of the scales were made by means of a binocular microscope at a magnification (x 10).

The total body length of 1786 fish were measured with a standard measuring board, marked in centimeters. The total body weight of 1444 fish was recorded to the nearest gram. The sex and stage of maturity ware also recorded for 535 fish. All measurements were carried out in the field on fresh materials from the commercial catch.

Age-Determination

The scale-examination of *Labeo niloticus* revealed the presence of clear annuli which are most apparent on the anterior part of the scale. False annuli, which cause so much difficulty in the age determination of some fishes, are of rare occurrence in the scales of this fish.

The determination of age has been based on counting the number of annuli found on the scales. The ages are expressed by Roman letters corresponding to the number of annuli, except for fish taken in late winter or early spring before the onset of growth. For these fishes an annulus was "assumed" to be present at the edge of the scale, and the age assigned exceeded by one the number of visible annuli present (Hile, 1948).

Body-Scale Relationship

The relationship between the total body length and the magnified scale radius (Table 1) was studied to find out the necessary correction for the direct proportion calculated lengths. The means of the scale radii were plotted against the total fish lengths and a regression line was calculated by the least square method. A straight line (fig.2) having an intercept of 68 mm. and a slope of 1.07 was found to fit the plotted data.

General Growth in Length

The growth in the previous years of life was calculated from the relationship of scale measurements to the total body length. For each age group, the average measurements were computed for the distance from the focus of the scale to each annulus, the length of the scale radius and the total length of the fish at the time of capture. Then a direct proportion calculation was made using the intercept 68 mm. as a correction factor, to find the average length at the end of each year of life for each age group (Van Oosten, (1953). The formula used was:

$$L_n = C + \frac{Sn}{S} (L - C)$$

where L_n = average length of fish when annulus n was formed,
L = average length of fish at capture,
S_n = average radius of annulus n.,
S = average scale radius,
and C = is the correction factor.

TABLE 1.—BODY-SCALE RELATIONSHIP OF LABEO NILOTICUS FROM THE NOZHA-HYDRODROME IN 1968-1970.

Total length (mm)	No. of fish	Av. Scale radius (x 10)	L / S Ratio	Total length (mm)	No. of fish	Av. Scale radius (x 10)	L / S Ratio
120	1	7,00	1,71	360	57	27,30	1,32
130	2	7,50	1,73	370	90	28,16	1,31
140	3	8,33	1,68	380	104	28,38	1,34
150	4	9,00	1,67	390	79	28,65	1,36
160	3	10,00	1,60	400	71	30,03	1,33
170	7	10,67	1,59	410	22	30,92	1,33
180	16	11,00	1,63	420	6	31,83	1,32
190	22	11,50	1,65	430	7	32,47	1,32
200	24	12,11	1,65	440	10	34,06	1,29
210	21	12,48	1,68	450	12	35,26	1,28
220	17	13,75	1,60	460	11	36,25	1,27
230	19	14,63	1,57	470	16	37,39	1,26
240	8	15,53	1,54	480	5	37,80	1,27
250	7	16,00	1,56	490	8	38,08	1,28
260	4	16,75	1,55	500	11	39,18	1,28
270	—	—	—	510	2	40,00	1,27
280	3	19,33	1,45	520	7	42,71	1,22
290	1	21,00	1,38	530	2	44,50	1,19
300	4	22,70	1,32	540	1	46,00	1,17
310	7	23,30	1,33	—	—	—	—
320	14	23,80	1,34	580	1	50,00	1,16
330	17	24,00	1,37	—	—	—	—
340	18	24,70	1,38	630	1	54,00	1,17
350	35	26,14	1,34	—	—	—	—

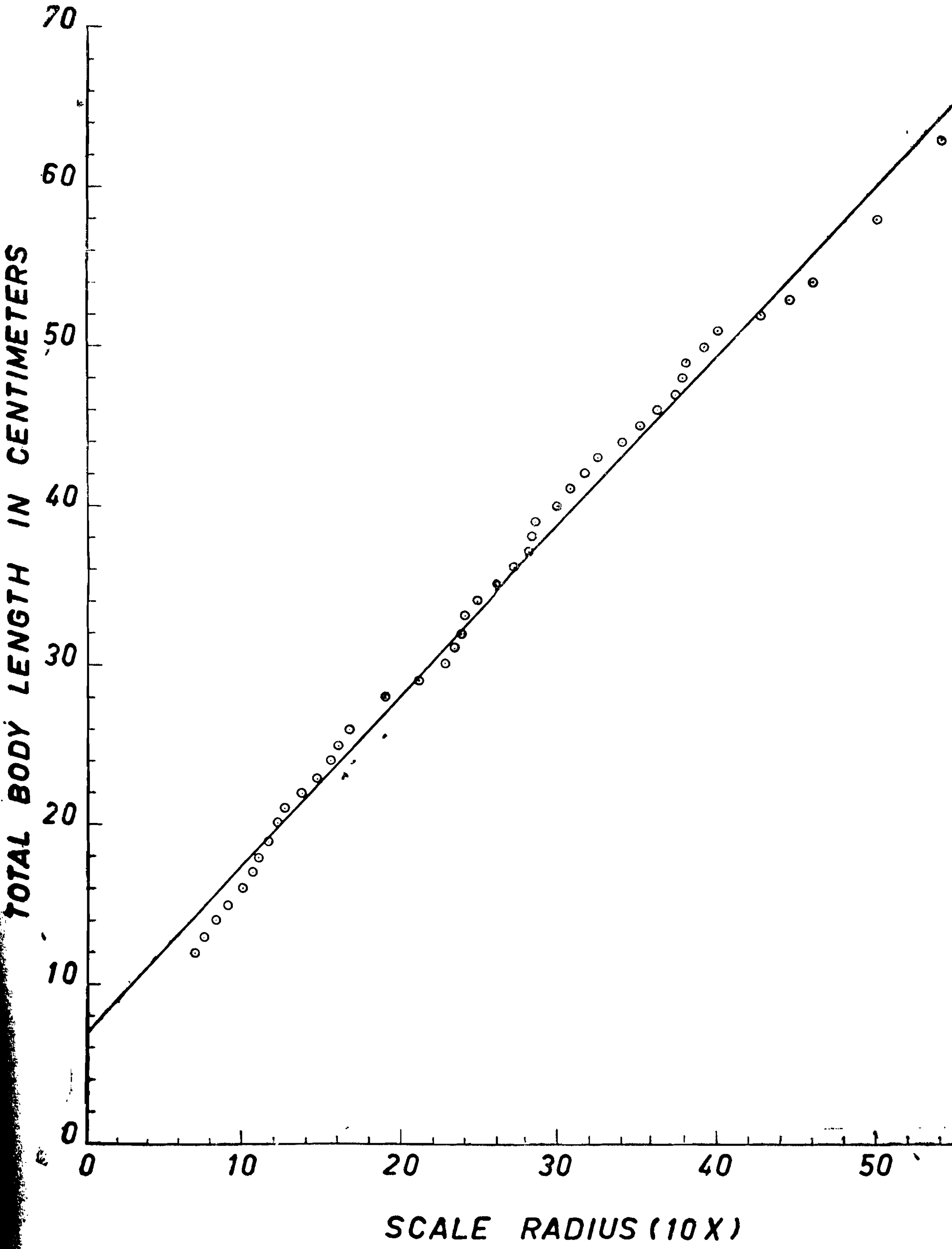

FIG. 2.— Relation between total length and Scale radius of *Labeo niloticus* from the Hozha Hydrodrome

The study of the calculated growth of certain individual age groups can be employed for the material collected from October 1968 to April 1969, to show the annual fluctuation in growth rate (Table 2). The agreements that occur among the calculated lengths of the different age groups indicate the absence of annual fluctuation in the rate of growth. The small disgreement that occurs among older ages can be attributed, for the most part, to the small number of specimens in the individual age groups.

Table (3) is general in the sense that the data have been dervied from all the materials available and the grand average of the calculated lengths is the general growth in length for *Labeo niloticus* from the Nozha Hydrodrome in the two fishing periods (1968-69 and 1969-70).

When the calculated lengths were compared with the observed lengths of *Labeo niloticus* at each age (Tables 2 & 3) we found that the mean observed lengths of *one-, two-, and three-year old fish* are higher than would be expected, although theoretically the mean observed lengths should fall mid-way between the mean calculated lengths of the successive year classes. This can be explained by the fact that a relatively large number of fish being taken at the end of the growing season, just before they formed a new annulus. Hence the mean observed lengths are closer to the calculated lengths at the time of next annulus formation than they are to the calculated lengths at the formation of their previous annulus. A comparison of the mean calculated length of each year-class at the time of annulus formation with the observed lengths of older fishes at each age shows very close agreement, due to the fact that these fishes were taken in late winter or early spring before the onset of the new growth.

TABLE 2.—GRAND AVERAGE CALCULATED LENGTH (mm) AT THE END OF EACH YEAR OF LIFE FOR ALL AGE-GROUPS OF *Labeo-niloticus* FROM THE NOZHA-HYDRODROME IN 1968-1969.

Age Group	Number of Fish	T. Length at capture	Year af Life					
			1	2	3	4	5	6
I	325	346	197					
II	135	390	195	383				
III	21	488	193	365	465			
IV	4	513	193	375	460	513		
V	1	580	189	361	447	530	580	
VI	1	630	184	369	462	548	596	630
Grand Average Calculated Length			194	380	463	522	588	630

TABLE 3.—GRAND AVERAGE CALCULATED LENGTHS (mm) AT THE END OF EACH YEAR OF LIFE FOR ALL AGE GROUPS OF *Labeo niloticus* FROM THE NOZHA-HYDRODROME IN 1968-1970.

Age Group	Number of Fish	T. Length at capture	Year of Life 1	2	3	4	5	6
I	461	348	194					
II	204	413	194	379				
III	25	485	193	365	463			
IV	5	516	196	377	461	516		
V	1	580	189	361	447	530	580	
VI	1	630	184	369	462	548	596	630
Grand Average Calculated length			194	377	462	523	588	630

In the collections, there was 89 small fish (O-group) caught at the end of the growing season (November-December). The mean empirical total length of these fishes was found to be 195 mm. This figure is similar to that obtained by back calculation for fishes at the end of the first year of life. This emphasizes the reliability of the scale annulus as an indicator of age.

The study of annual fluctuations in growth rate of *Labeo niloticus* as determined from the analysis of growth increments of the various year classes are given in Table (4). From the table, it is clear that the growth increment in length for the first and second years of life are very high (194 and 186 mm. respectively). The growth increment markedly decreases in the third year, while in older ages a regular decrease is observed.

To give a clear picture of the grand average calculated lengths at the end of each year of life, the changes in growth rate are represented in percentage to the total sum of increments during the whole life of the fish (Table 5). From the table, it is clear that *Labeo niloticus* made by far their best growth in length during the first and second years of life, where the annual increment is represented by 31 and 30 percent respectively. In the third year, the growth rate sharply decreases, and the annual increment was about half that of the first year and nearly half that of the second year. The growth during the fourth, fifth and sixth years of life continued to decrease, but gradually.

TABLE 4.—GRAND AVERAGE INCREMENT IN LENGTH (mm) OF *Labeo niloticus* FROM THE NOZHA HYDRODROME IN 1968-1969.

Age Groups	No. of Fish	Year of Life					
		1	2	3	4	5	6
I	325	197					
II	135	195	188				
III	21	193	172	100			
IV	4	193	182	85	53		
V	1	189	172	86	83	50	
VI	1	184	185	93	86	48	34
Grand Average Increment		194	186	97	64	49	34
Sum of average Increment		194	380	477	541	590	624

TABLE 5.—ANNUAL INCREMENT OF GROWTH (mm. AND %) FOR *Labeo niloticus* FROM THE NOZHA HYDRODROME IN THE FIRST FISHING PERIOD (1968-1969).

Year of Life	Number of Fish	Average Calculated length (mm)	Annual increment	
			(mm.)	%
1	325	194	194	31
2	135	380	186	30
3	21	477	97	16
4	4	541	64	10
5	1	590	49	8
6	1	624	34	5

Growth rate in Relation To Sex

A comparison by year class of the average calculated length of the different sexes of *Labeo niloticus* as shown in Table (6) indicates that the growth rate of both sexes are nearly equal in the first three years of life. In the fourth year the growth rate of females become greater than that of males. Older age groups in the catch of the Nozha Hydrodrome were only represented by females.

TABLE 6.—THE AVERAGE CALCULATED LENGTHS (mm) FOR THE DIFFERENT SEXES OF *Labeo niloticus* FROM THE NOZHA HYDRODROME IN 1968-70.

Age group	Males		Females	
	No. of fish	Total length (mm)	No. of fish	Total length (mm)
I	184	196	173	194
II	73	374	68	373
III	11	457	18	460
IV	3	510	4	532
V	—	—	1	855
VI	—	—	1	630

Length - Weight Relationship

The examination of the data obtained for the weights of *Labeo niloticus* revealed no significant difference between males and females. So the following determination of the length-weight relationship was based on the combined data for all fishes collected from the Nozha Hydrodrome in the two fishing periods previously mentioned regardless of the time of capture, sex, and state of maturity. This procedure gives the most practical curve for conversions between length and weight.

It has been found that the more general equation ($W = c\ L^n$) is usually the more suitable in the study of length-weight relationship of fishes where C and n are constants whose values are calculated from the logarithms of the total lengths and actual weights (Beckman, 1948). Using the grouped lengths and corresponding weights of 1444 fish ranging in total lengths from 12 to 63 cm, led to the following equation :

log W = −5, 4194 + 3.1401 log L

where W = weight in grams

and L = length in mm.

The value of the exponent (n = 3,1401) shows that the weight of *Labeo niloticus* in the Nozha Hydrodrome increases to a power greater than the cube of the length and this indicates that the condition of the fish is very good in that environment.

TABLE 7.—LENGTH-WEIGHT RELATIONSHIP OF *Labeo niloticus* FROM THE NOZHA HYDRODROME IN 1968-1970.

Total length (mm)	No. of Fish	Av. Emp. weight (gm)	Cal. wt. (gm)	Total length (mm)	No. of Fish	Av. Emp. weight (gm)	Cal. wt. (gm)
120	1	15	13	360	131	388	405
130	2	19	17	370	203	415	442
140	3	22	21	380	222	446	480
150	5	25	26	390	197	479	521
160	5	32	32	400	127	510	564
170	10	37	38	410	46	538	607
180	17	45	46	420	21	630	657
190	24	54	54	430	18	708	708
200	21	62	64	440	23	782	761
210	24	70	75	450	23	827	816
220	13	85	86	460	27	892	875
230	19	95	99	470	33	981	936
240	9	119	113	480	11	1025	1000
250	7	133	129	490	9	1130	1067
260	4	147	146	500	12	1210	1137
270		—	164	510	3	1335	1210
280	3	160	184	520	7	1371	1285
290	2	183	205	530	4	1483	1366
300	4	234	229	540	1	1575	1447
310	8	263	253	—	—	—	—
320	14	280	280	580	1	1960	1811
330	25	306	308	—	—	—	—
340	30	324	339	630	1	2350	2348
350	74	353	371	—	—	—	—

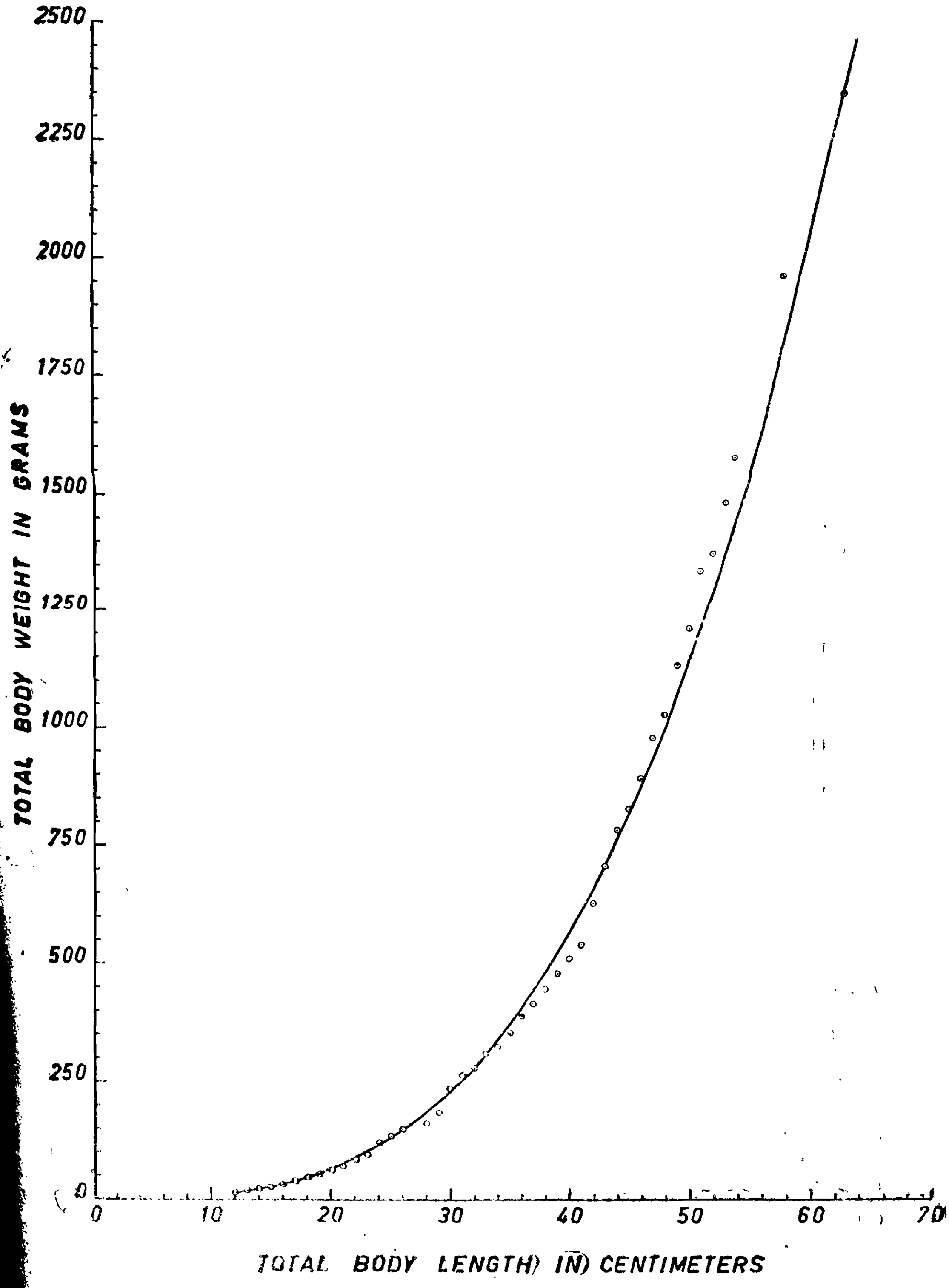

FIG. 3.—Length-Weight Relationship of *Labeo nilaticus* from the Nozha Hydrodrome in 1968 — 1970.

The general length-weight data of Table (7) are graphically represented in Figure (3). The smooth curve representes the calculated weights, while the dots represent the empirical weights. From the table and graph, it is clear that, the agreement of the calculated and empirical weights is satistactory.

To insure more representative values, the growth increment in weight for each year of life is given in Table (8). It is clear, that the growth increment in weight at the end of the fisrt year is very small, then it sharply increases during the second year, reaching its maximum value by the end of the third year of life. The growth increment at the end of the fourth and fifth years are slightly less than that of the third year. This may be explained by the attainment of sexual maturity of this species during the fourth year of life. After the fifth year, the growth increment in weight decreases with increasing age. So, from the fisheries point of view, it is valuable to catch this fish during the third year, and worthless to take it during the first year of its life.

TABLE 8.—THE ANNUAL GROWTH IN WEIGHT AND ITS PERCENTAGE TO THE TOTAL WEIGHT OF *Labeo niloticus* FROM THE NOZHA HYDRODROME IN 1968–1970.

Age Groups	Calculated length (mm)	Calculated weight (gm)	Increment in weight (gm)	Percentage of increment in weight
I	194	58	58	2.55
II	380	480	422	18.52
III	477	980	500	21.94
IV	541	1455	475	20.84
V	590	1912	457	20.05
VI	624	2279	367	16.10

Age-Composition.

In order to obtain the actual size and age composition of the population, it is necessary to use gear of a type that will capture all the size and age groups in their natural proportions. But in the practical analysis of the age-groups composition of stocks, we usually deal with the age-composition of the catches, caught by means of filtering gears, which allow only the younger (smaller) fishes to escape through the meshes of the net. From the maximum size of fish released by the meshes of the commercial gear, we may believe that, with practical accuracy, the right hand side of the length (and age) distribution of the catch corresponds to the actual proportions of the sizes and age groups in the stock.

Studying the age-composition of *Labeo niloticus* in the Nozha Hydrodrome we notice rich, moderate and poor generations. Table (9) shows the number of fish in each year of life in percentage to the total number of fish acught in each of the two fishing periods (1968-69 and 1969-70).

Fishes of the 1958-generation (year-class) were predominationg (77.90%) in the second fishing period. This generation, in the first period was abundant (14.40%). This means that the 1968-generation was rich. Also fishes of the 1967-generation, in the second period, was represented by 20.91%. This generation, in the first period was predominating (81.64%). This indicates the richness of the 1967 generation.

Fishes of the 1966 generation were represented by 2.41% and 0.53% in the first and second fishing periods respectively. The 1965 generation was represented by 1.35% in the first fishing period, while totally absent from the second period. This means that these generations were either of weak strength or greatly affected by the fishing activity carried out in the Hydrodrome during the successive years.

Each of 1964 and 1963 generations was represented by one specimen in the first fishing period, while totally absent from the second period. This means that these last generations were greatly affected by the unfavourable conditions prevailing in the Hydrodrome during the successive years.

TABLE 9.—THE AGE COMPOSITION OF *Labeo niloticus* FROM THE NOZHA HYDRODROME IN THE TWO FISHING PERIODS 1968-69 AND 1969-70.

Generation (Year-class)	First fishing period			Second fishing period		
	Year of life	No. of Fish	Percent	Year of life	No. of Fish	Percent
1969	—	—	—	1	5	0,66
1968	1	149	14,40	2	585	77,90
1967	2	845	81,64	3	157	20,91
1966	3	25	2,41	4	4	0,53
1965	4	14	1,35	5	—	—
1964	5	1	0,10	6	—	—
1963	6	1	0,10	—	—	—

Length Frequency

Like age composition, the length-frequency distribution varies not only from year to year, but also in the different seasons of the same year. In the present work we did not make monthly length or age distribution because the fishing operations were carried out not by the same fishing gears, but by different gears in the different months and so selectivity affected the monthly catch composition.

However, the analysis of lengths for all fishes caught during the first fishing period (Table 10) shows six modes corresponding to the six age groups previously mentioned. The first mode lies between 18 and 23 cm., the second mode between 36 and 40 cm., the third mode at 46 and 47 cm., the fourth at 52 cm., the fifth at 58 cm and the sixth at 63 cm. This length-frequency distribution emphasizes the existence of six age-groups, which were obtained from scale examinations.

TABLE 10.– THE LENGTH FREQUENCY COMPOSITION OF *Labeo niloticus* IN THE NOZHA HYDRODROME FROM OCTOBER 1968 TILL APRIL 1969.

Total Length (cm)	No. of Fish	Percent	Total Length (cm)	No. of Fish	Percent
12	1	0.097	38	194	18.74
13	2	0.19	39	168	16.23
14	3	0.29	40	92	8.89
15	5	0.48	41	35	3.38
16	4	0.39	42	6	0.58
17	9	0.87	43	5	0.48
18	17	1.64	44	5	0.48
19	22	2.13	45	3	0.29
20	21	3.03	46	5	0.48
21	23	2.22	47	5	0.48
22	11	1.06	48	2	0.19
23	15	1.45	49	1	0.097
24	6	0.58	50	4	0.39
25	5	0.48	51	1	0.097
26	1	0.097	52	6	0.58
27	—	—	53	1	0.097
28	2	0.19	54	1	0.097
29	2	0.19	55	—	—
30	—	—	56	—	—
31	—	—	57	—	—
32	1	0.097	58	1	0.097
33	2	0.19	59	—	—
34	4	0.39	60	—	—
35	31	3.00	61	—	—
36	114	11.01	62	—	—
37	198	19.13	63	1	0.097

Sexual Maturity

For the estimation of size at first sexual maturity, it is more subjective to collect the data in the spawning season. However, in the present investigation, the collection was made outside the spawning season. For Cyprinidae, the gonads in autumn start to develop rapidly with the apppearance of spermatocytes. Cyprinidae usually winter in this state of maturity (Nikolsky, 1963). Thus the present data of *Labeo niloticus* from the Nozha Hydrodrome, reveals some indications of the length and age of first sexual maturity (Table 11).

Among males, the fast growing individuals (30 %) reached sexual maturity at the end of the third year of life. For age group IV, about 83 % of the males were mature and for age-group V all males would to be mature, if present. Among females, the fast growing individuals (23 %) reached maturity by the end of the third year of life. For age-group IV the mature females represent 70 %, and in age-group V all the females were mature.

These figures mean that for *Labeo niloticus* the males in general attain maturity somewhat before the females. It was also found that the smallest male attained first maturity at 45 cms., while the smallest female at 47 cm. in total length. This also indicates that the females attain sexual maturity at a slightly greater length than males.

The big size of *Labeo niloticus* from the Nozha Hydrodrome at first sexual maturity (45-47 cm.) indicates that the protection of immature fish to preserve a spawning stock needs high consideration in the management of fishery. Fish protection by size limit and a closed season during spawning seems necessary. But under the present fishing condition the imposition of either a size limit or a closed season must be based on economic grounds.

Sex Ratio

In fishes, the sex-ratio varies considerably from one species to another but in the majority of species it is close to one. Also, within the species, the sex-ratio differs from one population to another, and may vary from year to year in the same population.

For *Labeo niloticus* of the Nozha Hydrodrome, it was found that among 501 fish examined (ranging from 35 to 63 cm in total length), the sex ratio was 282 males and 219 females. This means that the sex-ratio is 56 to 44 for the males and remales respectively. The deviation from the 1 : 1 ratio is not significant and may be attributed to sampling variation. It was also noticed that for age groups I & II the number of males are more while for age groups III & IV the number is less than that of females.

TABLE 11.—SEXUAL MATURITY FOR DIFFERENT SEXES OF *Labeo niloticus* FROM THE NOZHA HYDRODROME IN 1968–1970.

Sex	Males				Females				
Years of Life	2	3	4	5 & 6	2	3	4	5	6
Total body length (cm)	32-41	42-49	50-52	—	32-41	42-50	50-54	58	63
Total number of fish	251	30	6	—	160	43	20	1	1
Number of Immature Fish	251	21	1	—	160	33	6	—	—
Number of Mature Fish	—	9	5	—	—	10	14	1	1
Percentage of Mature Fish	00	30	83	—	00	23	70	100	100

Breeding

In fishes, the suitable spawning grounds have to ensure the most favourable conditions (abiotic and biotic) for the development of the eggs and larvae, and especially for the protection of the early stages from predators (Vasnetsov, 1953). Therefore the places in which fishes reproduce may be the same as those usually occupied by the fish or may be more or less distant in the case of migrating types.

Does *Labeo nilot cus* breed naturally in the Nozha Hydrodrome ? To answer this question we must have considerable data of mature fishes in the breeding season. Unfortunately our data were collected outside the spawning season, and the number of mature fishes obtained was very few to conclude, whether this species spawns naturally in the Hydrodrome or not.

It was also assumed that great quantities of samll fishes of different species especially that of *Labeo niloticus* entre the Hydrodrome with the inflowing water. An attempt to estimate the amount and species of the immigrating fry was under taken by H.J. Elster & Others (1960). The data obtained indicated that, small fishes of many species enter the Hydrodrome, and the most common was that of *Labeo niloticus* ; especially during September. It was estiaated that about 60,000 fry of *Labeo niloticus* enter the Hydrodrome with the inflowing water every year.

Since the fish yield of the Hydrodrome is continuously registered according to species and size and from the study of age-composition, length-frequency and length-weight relationship of *Labeo niloticus*, the number of individuals caught yearly from the Hydrodrome can be easily estimated. From that, it was found that the number of *Labeo niloticus* caught annually represent only 2-3 percent of the number of samll fishes, of the same species, entering the Hydrodrome. Consequently, we suspect that this species breeds naturally in the Nozha Hydrodrome, and the assumption that the stock of *Labeo niloticus* is yearly renewed from the Nile, is more probable.

SUMMARY

The study of *Labeo niloticus* was based on materials collected from the Nozha Hydrodrome in two fishing periods (October, 1968-April, 1969 and October, 1969-March, 1970). All fishes were caught by nets (gill and trammel) and seines in a commercial fishery.

Ages were determined and individual growth histories were computed from the examination of the scales of 786 fish. The body-scale relationship is shown to be linear and appropriate corrections were made to all caluclations. The general growth data showed that the *Labeo niloctius* made by far the greatest growth in length during the first two years of life. The annual increase in later years exhibited a regular tendency to decrease with increase in age.

Over the length interval (120–630 mm), the length-weight relationship was described satisfactorily by the equation $\log W = -5.4194 + 3.1401 \log L$. The calculated annual growth in weight was very small in the first year, then it sharply increases during the second year reaching its maximum value (500 gm) by the end of the third year of life. Then after the annual increment decreases so slowly with increase in age.

Concerning the stock of *Labeo niloticus* in the Nozha Hydrodrome, it was found that fishes in the second year of life were the most dominant representing 78–81 percent of the total Labeo catch in the two fishing periods respectively. Fishes in the first year of life was the only other well-represented group (14,40%) in the 1968–1969 collection, while fishs in the third year of life was the only other well-represented group (20, 91 %) in the 1969-1970 collection. The other age-groups were of rare occurrence in the commercial catch.

The sexual maturity was first attained at the end of the third year of life only by the fast growing individuals (30 % of the males and 23 % of the females). The smallest size to attain first maturity was found to be 45 cms. for males and 47 cms. for females. For age-group IV, the sexually mature individuals represented a high percentage (83 % for males and 70 % for females). For older ages, all fishes ought to be mature. The sex-ratio was found to be 56–44 for the males and females respectively. This deviation from 1 : 1 ratio may be attributed to sampling variation.

The natural breeding of *Labeo niloticus* in the Nozha Hydrodrome is not sure, and the assumption that the stock is yearly renewed, with the inflowing water from the Nile River, is more probable.

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