

# Study of The Nesting Habits of a Robin (*Turdus migratorius*) *migratorius*

## Nest Building.

In the late afternoon after class on Monday July 4 the beginning of a Robin's nest was observed in the tall birch close to the aquarium shelter. The position selected was a bend of the tree with a supporting branch 10 feet from the ground. Several layers had been completed.

At 6:45 P.M. I began my observation of the process from the aquarium shelter. Both birds had a share in the building operation, each working quietly and alone. In spite of their separate activities the work was exactly alike. The light was good enough so that I could distinguish the pale breast and brownish tinges of the female when she faced the shelter. The materials, which were gathered from a distance consisted of dead grass, weeds, and even a few strands of string. The average number of visits with a load was 15 per hour or a trip every 4 minutes. The amount which was carried to the nest varied with every trip. Sometimes it was only a single wisp of grass - then a large stiff straw and next a beak full of grass. Each bird flew straight to the nest site deposited the material gathered and began to mold it into the proper position by picking & pulling the grasses and other substance under the breast. When each piece was placed satisfactorily the bird sat on the mass turning round and round. Occasionally the wings fluttered so violently that mold material was blown out of the nest than the adult had gathered in the last load. The period of molding varied from 1-8 minutes according to the amount brought to the nest. Some of the materials were discarded - some rearranged. In the first half hour the ♀ made 8 trips at intervals of 2-6 minutes. At 7:15 the male contributed his efforts for a while making about 4 trips to her 3 times.

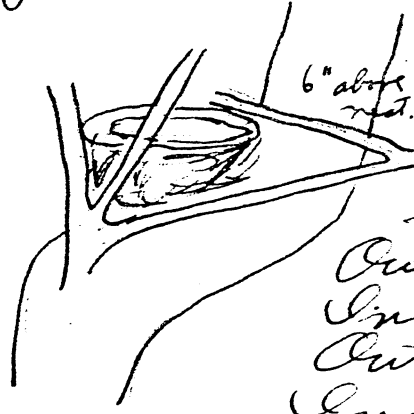


After classes were over there were too many people passing by, causing interruptions to her work. The nesting tree was subjected to this action daily because of its location close to a common pathway.

From 7:00 - 7:30 the trips were at 8 minute intervals with a longer rest between them.

During the mid-day observation on July 6. From 12:45 - 2:00 P.M. I saw the female deliver 5 loads of grasses for the top. each time she rested fully 10 minutes after her efforts.

Suddenly she left the nest and did not return. I looked for activity in the evening but did not see either bird. The nest did not look finished. Only a spear or two of grasses lined the stiff mud walls and the top did not seem full enough.



The deeply cupped nest situated 15 ft. up in the bend of a birch had the following measurements.

- Outside diameter 6.75"
- Inside diameter 3.75
- Outside depth 3.5
- Inside depth 3.25

The building occupied a total of three days work; the loads were brought more frequently on the first day; the average being 15 to the hour. This number decreased to 8 per hour on the second day and 5 on the third day.

Neither of the birds came anywhere near the nest on Thursday, July 7. On Friday and Saturday I visited the nest frequently and did not see or hear either bird guarding the nest. I feared that my Polius had deserted their nest just as the Black-billed Cuckoos did. However on the next day the female came back to begin her period of egg laying.

The following birds:

July 10. At 11:30 when I visited the nest I found one egg + marked it. Later had come to the nest during the next hot hour. On Monday July 11 after dark I found the female on the nest. Another egg had been added. At 7:30 that evening I took a photograph of the nest. The female was flushed from her incubation. She reacted rather nervously with a burst of the tail and many post-prey guest quest - quip! She did not come back to the nest while I stood in back of the frame but came enough to watch me looking. At 9:00 P.M. however she was back on the nest. I held a light but did not seem to bother her. I held it just long enough to see that she was incubating the egg.

Monday July 12<sup>th</sup> at 8:00 A.M. when I climbed to the nest the eggs were warm but the female was not in sight. She appeared 15 minutes later but had incubated only for a period of 5 minutes. Then someone showed her the shells. The bird flew off in a great commotion. This happened several times in quick succession. As I decided to depart at a more favorable time sometime between 8:45 and 11:30 the bird was laid. This one was smaller than the first.

Egg	Length	Width	Date
#1	1.24"	.84"	July 10
#2	1.16"	.81"	July 11
#3	1.09"	.78"	July 12

The clutch was now complete with the number 3 for no more were added.

Incubation

The period of incubation began on the second day! As I mentioned before my only observation of this was at night after sun down. During the morning of Tuesday the 12<sup>th</sup> while I was working at my laboratory place I saw the male fly to the nest.

of the aquarium shelter with food. He would survey the situation and then quickly fly to the perch 6" above the nest. Fortunately I could move quickly from one window to the next in time to see him deliver the morsels.

Wednesday July 13<sup>th</sup>.

The position of the female while incubating always seemed to be in the general direction of the pathways. When disturbed she would fly off toward the open space near the pine and out to the arrow perch high on a post near the road. I had to observe this by watching at the time of class dismissal from the roadway and the front of the shelter and at one time from behind the large pine.

The female incubated her eggs constantly from 5:45 A.M. to 6:45 A.M. without receiving food from the male. The old bird was off the nest for 15 minutes at noon getting food for herself. The eggs kept warm in her absence as the air was not cool enough to chill them.

Friday July 15

From 8:30 - 8:30 P.M. the adult birds were in a fit of rage and acted peculiarly all the time. The female left the nest every few minutes. At last I discovered the cause, it was a chipmunk in the pine. The female scolded almost as much as the male. Suddenly I heard a scurrying and a squealing sound: the chipmunk was being chased across the yard and into the wood pile back of Riggs house. I saw the same performance of adult birds at Mary Song's Wax-Wing nest on Maiden Lane.

Sunday July 17 8:10 - 8:40.

The female was on the nest at 8:10 when I went into the shelter. After 5 minutes of observation I was pleased to see her carefully push the eggs around and pick them into a new position. At least I interpreted the action

as such. The male came to the nesting tree several times without food - just to inspect and finally brought a whole mass of earth worms after 25 minutes of incubation the female received this reward. After feeding her the cock Robin flew up to the electric wires near the shelter and bubbled over with a Carol.

Tuesday July 19<sup>th</sup> - 11:45 - 11:45

Just before lunch I went to my nest observation post; after 10 minutes time the female made a complete about face when someone stopped on the walk near the nest. She continued to orient herself toward the source of danger; with each new noise or disturbance she moved carefully about in the nest keeping low and supposedly unobserved with her head turned or cocked to one side. Every now & then she peered over the side. Just as the classes were dismissed the male came to the nest with a grasshopper; he stopped on his customary perch 6" above the nest and then stood on guard on the edge for a few seconds. I thought that he was going to relieve the female for a period of incubation.

Thursday July 21.

Shortly after breakfast I weighed egg #1; I could hear a pecking inside & thought that hatching time was very near. I placed a small bit of gauze around it and hurried back to the nest as soon as possible. The egg weight was 5.8 grs. deducting a fraction for the gauge. All day long the female acted very nervous & flushed easily with every slight noise.

~~Hatching of Robin #1 on Friday~~

At 10:30 Robin #1 was hatched - a limp naked mass not quite dry; no shell was evident. He weighed .6 gram less than the day before with shell and all. The pinkish fleshy skin was much wrinkled over the neck and back but was drawn taut over his large feet.

belly. The small natal down tufts on the head & mid back were not fluffy but very scragged & matted. The bird was so weak that the head dropped off to one side; the wings were very little support to the body as he attempted to prop himself up. In spite of all the apparent weakness the bird was able to lift his head high once when I dropped my measuring instruments. The vibration was sensed & instinctively the head went up with opened mouth for feed. The egg tooth showed prominently and the head was all eyes. I observed the nest for several short periods but did not see the young one fed at all that day.

By 10:30 the next morning Robin #1 had doubled his weight and egg #2 which I found pipped at night had hatched in a similar condition to #1. Robin #1 had practically doubled his weight. The down on his head and back and a patch on each wing was all fluffed up. The adult birds just screamed at me whenever I approached the nest. They tried so hard to attract everyone's attention to themselves.

I tried using two planks for a platform in the pine tree near by; I put up a poncho for a partial blind. The cover was not sufficient and the birds made such a fuss I was afraid to continue observation there until I could add more canvas. However I left the poncho for that day so that my birds would become accustomed to the clapping noise with the wind. Robin #1 had doubled his weight according to expectation in spite of the fact that I had not seen any of his feedings; these probably came just after each of my visits. At least my fear of his desertion was no longer in evidence.

July 23 - Saturday found my third bird out of the shell at 10:30. Number 3 was much drier than the others and smaller.



I put up my permanent blind in the pine tree about 15 feet away. The platform was on a level with the nest or perhaps a little higher; I fashioned the blind out of old pieces of canvas and the poncho stringing the sides up with cord. My stool was made out of odds and ends from the Eggs Woodpile.

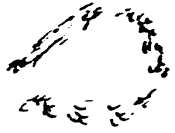
July 26<sup>th</sup>. Robin #1 showed five tips on the primary regions; his eyes were closed tight ~~but~~ his head <sup>was</sup> a little stronger. The egg tooth seemed a little smaller. His weight at more than quadrupled. From 7:30 - 8:15 I observed two <sup>interval</sup> twenty minute feedings of grasshoppers by the male while the female brooded during that 40 minute period.

July 26<sup>th</sup> The fourth day Robin #1 had considerable down on the head wings & middle back; his eyes remained closed. The egg tooth was almost gone and the sheaths were developing on his primaries. Even the five tail feathers sheaths were picking through the epidermis. The feeding periods were fifteen minutes apart, both birds assisted in this constant supplying of food. Even at this early age the young were infested with lice & mites, acquired from the parents. At general nest inspection and sanitary inspection, both parents did their part. Robin devoured the excreta at the nest - then picked off mites & lice and rushed off for more food. As soon as a nestling was fed the adult watched the uneasiness of the nestling as it raised the body from the post as if to deposit the fecal sac over the edge the adult bird took ~~that~~ <sup>them</sup> immediately. Whenever the birds were disturbed and assimulations of waste occurred the parents cleaned the nest before leaving at the next feeding.

On Tuesday July 26<sup>th</sup> the fifth day Robin #1 could open his eyes. A small bump of the egg tooth was still present.



Tail feathers had pushed through and primary sheaths had grown quite long. Feather tracts were visible on the head especially the crown cheeks & lower jaw; tracts were visible on the <sup>mid</sup> back & wings. The natal down still remained on the back and wings but the head only had 3 regions arranged in a triangle



position of the down on the head.

The bird opened his eyes & mouth at every vibration. The feeding periods were a little closer together averaging a rate of 12 minutes in the period from 7:00 - 8:30.

The seventh day Thursday July 28 the oldest young still kept his eyes closed most of the time only opening them when a vibration occurred. The fly spots of natal down decreased while the new feather tracts for juvenile plumage increased - small feathers showing on the thighs and along the sides in addition to those of the head back wing & tail. The pot belly had decreased considerably but was still quite prominent. The sheaths on the primaries had increased to 25 mm. the tail 4 mm.



head

The feeding period was still 11-12 minutes apart. The old birds scolded a good deal all day long. Whenever I came by the nest they scolded & screamed - erected their feathers and snapped their bills - darting around and swooping down at me especially at the time I weighed my bird.

6 spots on wings

middle back.

Remaining spots of natal down.

Friday July 29<sup>th</sup>

At 8:00 The female brought cherries; this was a change in diet from the insect diet of the first few days. She cleaned the nest and settled down to brood for a while.

At 8:10 the male brought an earth worm; the brooding one did not move at first but the vibration of the adult male as he arrived at the nest was enough to cause all three heads to pop up; this action almost pushed her out of the nest so she finally left him to feed the brood.

At 8:12 she brought back a grasshopper.

At 8:15 the ♂ brought a single grasshopper and left immediately while she continued to brood.

At 8:18 ♂ brought another grasshopper.

At 8:30 ♂ brought a beakfull of grasshoppers; the female left only for a few minutes while the ♂ did his sanitary inspection. The ♂ continued to brood for a 40 minute period but not without interruptions. The rate of feeding in the next hour was at an average of 11 minute intervals and not so erratic as at first.

The head of Robin #1 was completely feathered with only four tufts of his natal down left. The young picked it off from each other & ate it; they also picked it off their own wings. Rufous color appeared in his wings and a rufous color with white appeared on the upper sides of the breast.

A tiny tip of the egg tooth still persisted.

The throat had black streaks on the sides. The unsheathing wings made a clatter like flabiness over the body which the bird seemed anxious to remove.

Any pounding or tapping made the bird jump & rattle and open his mouth. I fed my Robin a worm and pushed it well down with

a pair of forceps. The swallowing reflex of the gullet was not just right; I was afraid he would choke so I removed part of the piece with the forceps and he managed the rest. When the adults feed the birds they do not seem to remember which widely gapping orange throat had the last morsel. When they come with a beakful of grasshoppers they always one by one a time try all the throats. If the young one does not respond the food is passed to the next. The food is pushed well down the throat of each young bird.

On Saturday July 30 from 12:45 - 2:10 the female brooded the young for 4. 10 minute periods. the feeding periods were now about 8 to 9 minutes apart. Both parents continued the feeding.

All of the down except four spots on the head had disappeared. A collar of feathers now covered the neck and the head was nicely feathered on the crown; the upper part was almost covered with whitish feathers. Wing primaries were out of their sheaths & now and the coverts were brightly reflexed in their centers. The flanks and breast were more covered than before with spots scattered on the sides. This shows their relationship to the thrushes.

My Robin showed quills about 1/2 inch out at the tips; he could pick & preen at his feathers and stretch his wings and call for food.

Sunday July 31 7:20 - 8:30 P.M. The weather was warmer than usual for this whole nesting, incubating & feeding period there was practically no cool weather and no exceedingly hot weather.

The young were so big that they crowded each other considerably; one had to be kept almost out of the nest. They seemed uncomfortable warm - holding their beaks open for several moments at a time and continuing to gape.

They also held out their wings without actually stretching them for wing exercise. When I weighed Robin #1 he kept his mouth open most of the time; I looked into his orange throat and saw considerable moisture or fluid. I learned that this was probably a method of heat adjustment - as the young do not have water in their early development. Robin #1 had numerous cherry stones in his excreta at weighing time. I observed closely during this period to see how many were given to each but the birds were not fed at all during this hour. At 7:50 one adult came down to the pin cherry tree near the shelter & pulled off a few, he flew to the nesting tree gave 3 soft quirts and then flew off; the young reached up their heads for food as usual but settled down again. It was almost dark at 8:00 as the birds grew the feeding period was shortened as to intervals, this observation however did not conform with the rest. Perhaps it was the weather.

Robin one acquired his bristles today; his femurs were completely feathered; the small pyrostyle was fringed with feathers the back feathers were unsheathed and a white throat patch was completed. The flanks had an additional blackish to the rufous area.

August 1 - Monday

Robin #1 was all feathered out and able to clap his bill noisily and make soft chirps and tweedles. His eyes were very wide open. His breast was more rufous and streaked & spotted brightly with a few white tips on his tail.

From 7:00 - 8:00 the female brooded for 5-10 minute periods leaving at the approach of the male; she returned promptly with food & brooded until the male came back.

The white throat of my Robin was conspicuous from my platform; the white line over the eye was plain and the buffy + black colors of the back were so clear.

The weather was fair + cool and the light was not quite enough to distinguish at 10 o'clock.

- 7: 30 grasshopper      7: 35 cherries
- 7: 40 "                      7: 41 "
- 7: 50 katydid
- 8: 00 cherries              8: 05 cherries.
- 8: 10 cherries

The adults were somewhat disturbed by the activities of repairing fish net on the cement block directly below the nest. None the birds scold considerably but they did not stop the feeding.

August 12th

6: 45 - 7: 45 raining.

My Robin was very active; he showed his first signs of fear; when the adult birds called after I took him to be weighed he suddenly leached out of the weighing pan calling back to them; I had a mad scramble to catch him. In order to complete the weighing I had to tie him in a gauze bandage. His belly was very white + fleshed a bright rufous; the white of his tail had increased considerably. The youngsters stretched and stretched after I returned him to the nest. The female held her wings over them for about 10 minutes after her first feeding + cleaning the nest. The rain was not heavy and they really did not need much attention they could rally huddle + keep warm. The feeding periods were about every five minutes as on the previous day.

August 13th

Great commotion was staged while I removed Robin #1 for weighing; he struggled to get away so I had to wrap him up again for weighing. He clapped his beak wildly at the subject.

instruments. He was surely ready to fly off. All his plumage was very neat & pretty; his gray back streaked with white was a contrast to the black head; his bill was very yellow & his black auriculars conspicuous as well as the yellow eye ring; his feet were pinkish with darker nails. his wings well bushed & his tail prominently tipped with white. After weighing & measuring him I placed him in the nest. he settled down a minute but as soon as I was seated in the blind he walked out onto the rim walked around balancing & teetering - then snuggled in the nest with the rest for 5 minutes.

7:25 OT brought worms & after cleaning the nest left abruptly.

7:30 O → came back but did not feed them; he watched the blind closely - cleaned the nest & left.

Robin #1 stepped on the backs of the other 2 birds hopped up to the 6" perch stretched & then jumped back into the nest on top of the others.

7:40 the OT fed them cherries & cleaned the nest.

7:40 the O → fed them cherries.

At 7:45 Young Robin #1 decided to leave the nest; I climbed down & replaced him. However as soon as I had him safely back he jumped off again. I did this 7 times and finally decided he would be safe for the night. The male followed him calling & calling while the female screamed at me. He was off after 13 days of nest life. The female fed the remaining birds twice after that and brooded them that night.

At noon August 4 the second bird left; he did not get much attention all day.

Robin #3 remained in the nest until Saturday Aug 6. At 5:00 A.M. he was startled by me; when I climbed up to the nest he flew off quickly.



I put him back in the nest and covered him with my hand to quiet him. This seemed to calm him so that the removal of the ladder did not disturb him again. After breakfast he was off too.

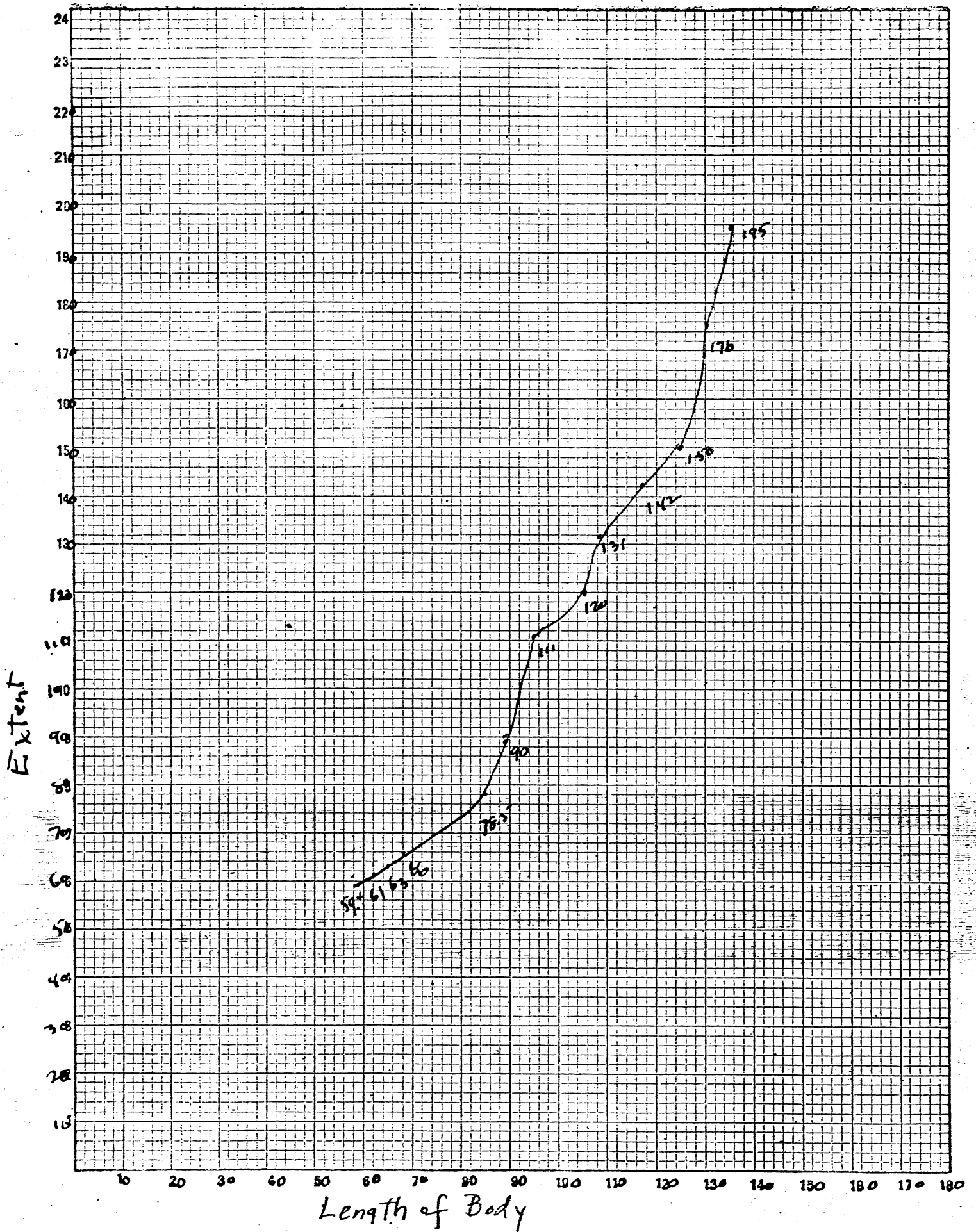
My three birds grew very rapidly; from the 1st to the 17th day of their nest life Robin #1 increased his weight about 12 fold and increased his body length 3 times. It was interesting to watch their senses becoming more keen; hearing certainly developed fast. and the weight increase showed that appetite must have increased enormously. The rate of feeding from very little the first two days to 30 + 20 minute intervals the next few days - 15 - 12 - 11 - 10 - 8 - 7 - 5 and so on shows the supply & demand which was created. They received animal food at first & then vegetative diet of cherries toward the last. Both parents fed them and both cleaned the nest. During warmer weather the number of times fed was less than at other times. In general the feeding of the young in the course of the day depended upon their age and the weather. The feeding was from morning to night but not after dark.

The adult male sang early in the morning & late at night, as late as 9:00 P.M. Robins have that reputation. Some of the time he was rather a ventriloquist. At the stage of flight my young bird had an alarm note like the adult. - a "chip" varied in pitch & volume from soft & low to high & shrill. I suppose my Robin is able to act out these lines from Fizzles.

"I am a little Robin  
And my head I keep a bobbin  
And I always rise to catch the early worm  
I've eaten all his brothers  
And half a dozen others  
Golly, how they tickle when they squirm"  
Anonymous



E.W. Townsend.



Increase in weight approximately 12 Times.

