

**NOTES ON A FEW OF THE NESTS OF  
THE LEAST FLYCATCHER (EMPIDONAX  
MINIMUS) AT THE UNIVERSITY OF  
MICHIGAN BIOLOGICAL STATION**

1933

**-ROBERT LEHEW BROWN-**

Notes on the Observation of a Few Least  
Flycatcher (*Empidonax minimus*) Nests  
Robert S. New Brown

It was on June 27, 1933 that my attention was first called to a nest, to which I shall refer ~~to~~ as nest No. A, situated in a small Beech (*Fagus grandifolia*) in back of a row of cabins. This small, well-built structure was smuggled in a crotch of a limb about ten feet from the ground and well out from the trunk of <sup>the</sup> tree. Its shape was that of a deep cup fashioned out of grasses, plant down, rootlets ~~and~~ and birch bark. As I came closer to it down a rather well worn path, a small bird flitted out of the nest emitting a few sharp, metallic "chebecs". As it sat perched quite erect on a nearby branch its whitish wing bars could clearly be seen. The grayish head, white eye ring, olive brown back, light grayish underparts and dark sienna tail were also quite distinctive. By climbing up onto a small fence post directly beneath the nest and reaching up I was able to feel into it. There were two eggs. Upon further examination I found them to be small, spotlessly white, with one end considerably smaller than the other. At the larger end there was a faint circular cap pink similar to a water mark. For measurements refer to Technical Data. It was at this time that I noticed that the nest was lined with fine grasses, hair and a few feathers.

The next day upon looking into the nest <sup>with the aid</sup> ~~by the use~~ of a step ladder ~~and~~ I found to my surprise that one of the eggs had hatched. The young was almost naked except for a few patches of down which was still wet and was matted close to the body, indicating that not much time had elapsed since the hatching. I immediately carried the young down to the Ornithology Laboratory for the purpose of weighing and measuring (See Technical Data) ~~on~~ a closer examination of the young

disclosed the fact that the down was segregated into  
the regions around the eyes, on the occipital  
region of the head and down the back. The follow-  
ing afternoon I discovered that the other egg had  
hatched. It was at this time that Mr. James Beeghly,  
who was also observing the nest and to whose  
notes I have often referred, took over the measur-  
ing of the first one to be hatched and whom we  
called "Flycatcher I." I then recorded the rate of  
growth of "Flycatcher I" from then on.

It was not ~~until~~<sup>thirty</sup> the thirtieth of the month that I  
was able to locate a suitable observation platform  
or "tower," but managed to find one that had been  
used the previous year. Being made out of rough  
fresh-cut Aspen trunks and the props being around  
16 ft high with a heavy platform about 10 ft  
from the ground made the structure stable but  
rather cumbersome. The Station truck brought  
it up near the nest and with the help of  
three men we placed it facing westward  
about two and one-half feet from the nest.  
It was left <sup>alone</sup> a few days to accustom the bird  
to its presence and then I placed a tent on the  
platform and left this untouched for a few more days.  
Finally we stretched this tent cloth over the  
props projecting above the platform, the side  
nearest the nest being made almost entirely of  
mosquito netting so that a good broad view could  
be obtained on that side. A few "peep holes" were cut  
for a clearer observation. After cutting away  
near two leaves over the nest I found that  
by sitting in a common chair on the "blind" I  
had quite a distinct view down into the nest  
and thus the nest was now ready for un-  
interrupted observation. In the meanwhile Mr.  
Beeghly had made a few observations from the ground  
with the aid of field glasses watching both parents  
feed the young. Grubs and worms seemed to be their  
main diet at that time.

In July the second, I entered the blind to find that one of the adult birds was sitting facing me and seemed quite undisturbed at my entering. Upon ascertaining that things had quieted down a bit she left the nest suddenly and silently to return in a very few minutes with a green grub in her bill, which she fed in bits to one of the young. It was about eleven o'clock in the morning and the day was clear and warm. About five minutes later the male arrived with a large insect, part of which he gave to the ~~bird~~ <sup>brood-</sup> my bird and after a few moments of "chattering," they both proceeded to feed the young, leaving a bit, tho, for themselves. The male then flew a few yards off before uttering a sharp "Chk-bee". The female remained brooding the young changing her position several times especially when any noise was made within the blind. It seemed to me that she "fluffed" <sup>her feathers</sup> quite a bit at intervals.

The next day at eight-thirty my arrival at the nest found both parents away, but the female soon returned and fed the young, again eating the remainder of the food herself. A "chbe" announced the arrival of the male bird, who fed one of the nestlings directly & then flew off. He came by in <sup>an</sup> unusually round about way to the nest, as ~~if~~ <sup>that</sup> he suspected that he ~~was~~ <sup>was</sup> being watched. The next time he came near the nest, about five minutes later, the presence of a large Robin directly under him seemed to prevent him from depositing his load. When he did finally come back the female left the nest quietly. The next time the female was fed and both birds flew off together circling around the vicinity uttering their characteristic "Chbees". The young remained very quietly snuggled close to the nest & I noticed that when anyone passed by below both or one of the <sup>adult</sup> birds would fly back to the ~~tree~~ <sup>nest</sup> but never to the tree. At 9:00 the female returned to the nest to brood the young but did not feed them.

Ten minutes later she left the nest silently. A sound of a nearby "chip" caused one of the young to open its mouth for food. Upon returning to feed them the female settled on the nest seeming to snap her bill quite a bit. When she comes to the nest, it ~~was~~ possible to distinguish her from her mate by the fact that she fluffed out her breast feathers quite noticeably before settling on the nest. Twenty minutes had elapsed before the male returned to the tree. The female flew off while the former fed the young and then flitted quickly down to a wire below to sit there solemnly for a few moments and the off again after food. A minute later the female was back at the nest to feed and brood the young. Four minutes the male replaced her position to feed one of the little ones a white spider but was unsuccessful and this flew away with it. Soon the female arrived at the nest's edge waited a few moments & then settled on nest. Her mate arrived and gave her a bug which she after half-using called the young with a few "chips" and they responded with open mouths and were thus fed. Usually the procedure is rather silent. That evening I noted a different and interesting change in the behavior of the female when I went to return the juvenile to the nest after measurement. Usually she merely flies quickly from the nest to some nearby tree or limb as near as the distance of one or two feet from it. This time almost had my hand over her when she suddenly flew up and dove violently around my head and then almost standing still in the air ~~and~~ the bird made a very noticeable "clacking" sound. I judged that this was done with her bill as I had heard her do the same, except much less violently, of course, after eating. She kept this up till I left the vicinity.

In the 4th, the weather being warm, fair and with a moderate wind scattering the clouds, I arrived at the nest and found the parents absent. In side of two minutes one of the parents had returned and fed both of the young, which seemed to keep their mouths open continually as if panting in the heat. At 3:35 P.M. one of the adults flew back into the tree and ten minutes after that the female returned the nest and resumed

her brooding. She seemed to sit rather lightly over rather on them. Upon her departure, the male fed one of the young and it was at this time that I first noticed the procedure of the nest cleaning. As the male bird, for this particular duty seemed to be assigned to him only, approached the nest the young open their mouths and he jammed quickly into their throats then almost at the same time they raise the anal portion of the body up to the level of the edge of the nest and eject a fecal sac which the male bird picks up as soon as he draws his beak from their gullet and is off immediately. The whole thing seemed almost one continuous motion. At this time I was unable to determine whether or not the excreta was eaten or dropped at some distance from the nest. The female returned in a few minutes, fed one of nestlings and broods them after sitting on rim of nest a few moments. Five minutes later the male brings food and carries away excreta in company of his mate. Through the use of some 4X non-prism field glasses I noticed that the plumage of the male is a little grayer than that of the female whose feathers on back have more of a dove brown cast.

Mr. Beegley and myself both noticed the difference in the behavior between the two adult birds. The female is usually rather calm and undisturbed although keeps up that nervous, observant, twitch of her head which is so characteristic of the flycatcher as a whole. As she sits on the edge of the nest she is never impatient to get away but often fluffs out her breast feathers slowly as in preparation for brooding. The male, however, is a decided contrast. As soon as he arrives at the nest, he feels very conspicuous, ill at ease and can't wait to be off after another insect, only occasionally does he remain for a few seconds, cocking his head from side to side looking at the young to see if there be need of his carrying of some excrement.

nest five times. After leaving the nest he often went to perch on the <sup>fence</sup> wire below the nest. The female approached the nest four times from the north, three times from the south and but once from the east. She fed the young only six times. At one time she brought food to the nest but was frightened away by some source which I was unable to determine, returning in two minutes to complete the feeding again. I noticed that when she leaves the nest she often goes directly to a little twig above the nest or more often to perch on an electric light wire which runs along a few inches from the blind, thus a few "peep" holes along that side offered some very good portraits of the adult female Least Flycatcher.

I was unable to make complete observations on the nest and young during the final stages of development more than recording measurements etc, but Mr. Beeghly happened luckily to be on hand at that time & made some interesting observations which I will quote. In the the evening of July 10 about 7:00 PM. Upon returning his "charge" to the nest after recording data. he was surprised to find that during his absence the other bird had disappeared from the nest. An unsuccessful search was made in the grass & bushes below the nest. The parent bird, probably the female, was calling near by. Then noticing that the young just placed back in the nest was balanced quite precariously on the edge of it, he climbed up into the blind to observe what would happen. In several minutes it stretched its wings several times and then fluttered almost straight down to the ground and sat there in the tall grass. The female came that way and flew from bush to bush in an excited manner. Beeghly then came down from the blind & returned the chick to the nest. But it repeated its previous performance immediately. Finally he picked it up and let it perch on the wire cable beneath the nest where it remained till nine o'clock that evening, at that

time it was placed back in the nest. It stayed there all night perched on the edge of the nest at least till a quarter of five, but had disappeared when he returned at seven. Very soon after that he heard the "cheeping" notes of one of the young birds close by. Investigation disclosed both of the young perched on low twigs, one about twelve feet from the other. As the female <sup>approached</sup> with food, he withdrew to watch them being fed. All young were then placed side by side and were photographed by Frank Hunka. <sup>(See description)</sup> Later in the morning Beeghly returned and found one of them in the same place, but the other was about thirty feet from that in a low bush. The female was in close attendance & was feeding them regularly. As he left them then, it was the last time that either he or I saw of that particular family of Least Flycatchers.

I have referred you to Technical Data for certain measurements of the young, but think a word on the appearance of feathers and changes in behavior might be placed in the paper at this point. At the age of one day we find the young quite naked except that the presence of down is quite evident around the eyes, across the unopened eyelid, the occipital portion of the head the flanks and humeral region of the wing. The second day we find the down as before, except some noticeable along the abdomen and along spinal column. It is also beginning to show on the radial portion of the wing. The third day the down is heavier and appears for the first time on the lower femoral portion of leg. There <sup>were</sup> also small black specks on back showing the beginning of feather tracts. At the age of four days the feather tracts are more evident except on breast and abdomen where the skin is entirely bare. The fifth day passes with no change in appearance of down or feather tracts but the bird seems more active and struggles when measured. A faint "cheeping" noise greets us on the sixth day and the



sheaths on the wing show quite plainly. The breast feather tracts are quite prominent and seem lighter than other tracts, also the down seems to be coming off. The next day finds the down still disappearing. At the arrival of the eighth day the wing feathers are beginning to unsheathe and the white wing bars are quite evident. That is also more noticeable, and the down is still on head. Nine days have come and gone but no feathers are fully unsheathed and there is just a little down over and under eye back to neck. The tenth day announces a change in voice from a peep to noticeable "chebec". The head feathers are completely unsheathed with the others about half so. On the eleventh day we find the young very active and it is able to hop or scoot along by means of wing and leg action. As the bird was celebrating its twelfth day of birth and consequently the last day that I measured ~~it~~ I found the wing feathers a little more than half unsheathed with other parts a little more than that.

The next Least Flycatcher nest, <sup>which I called Nest "B"</sup> that I had occasion to observe for a brief time was located about fifty feet <sup>to the west of</sup> ~~from~~ my cabin in Manville. In back of this cabin is quite a steep hill and about fifty feet half way up stood a large white Birch tree (*Betula papyrifera*). About fifteen feet from the ground and about three feet out on a substantial branch <sup>of this tree</sup>, partly in a crotch and partly saddling the branch, was the site chosen for the nest. It was very securely fastened to its supports. I found later upon removing the deserted nest by coating of spider webs for purposes of adhesion. The materials of the nest were much the same as in Nest "A". I was able to recognize a little more specifically certain of those used, for example, in the lining the flowering heads and stems of such grasses as *Aristida Alba* or Red Top and *Lanthonium spicatum* ~~was~~ mixed in with the hair and other substances. As to the bulk outside of birch bark I would say that <sup>much</sup> of the plant down used came <sup>from</sup>

milkweed (probably *Asclepias syriaca*) and "cotton grass" or *Eriophorum viridi-carinatum*.

In the nest were three young, quite downy in appearance but with feather tracts <sup>or ~~feathers~~ <sup>evidently on wings</sup></sup> evident enough. I took a few measurements (see technical data) and also those of the nest. From previous calculations I judged that the young were about five possibly six, days old. The date at this time was July 3, 1933.

About three days later I again visited the nest, took measurements. Comparing these recordings with those taken in Nest "A." I found that the birds were practically eight days old & thus verified my first calculations. The wing feathers were fully sheathed and those of the tail just starting. The brownish gray feathers <sup>on</sup> the back were just being unsheathed and the gray, buff, white feathers of the breast were <sup>partly</sup> unsheathed making a distinct <sup>white</sup> <sup>showing</sup> <sup>very</sup> nest with the naked mid ventral region <sup>very</sup> bare and reddish. I could tell by the extreme activeness of the young that they wouldn't be in the nest long and true to my expectations when I returned again in a few days all had flown.

My next venture in the realm of nesting habits of the Least Flycatcher consisted mostly in a few observations of a family which were being watched by Miss Helene Dedrick, another Advanced Ornithology student, whose "very cleverly written" report gives one quite a complete "story" of what she observed and whose cooperation in letting me "look in" on her nesting subject is greatly appreciated on my part. On the eighth day of July she led me along a fire line at the top of the hill in back of the cabins to a spot almost directly north of the location of Nest "B". From there we turned south off the line a few yards and ~~there~~ <sup>in</sup> the <sup>out</sup> the low hanging branches of a Red Oak (*Quercus borealis*) was fastened a small nest so covered by

leaves that it was sometime before I could make it out from its surroundings. I could just reach the end of the branch by standing on tip-toes & then carefully drew the branch down so I could fall into it and found two eggs. Not wishing to disturb the parent bird any longer as it flitted excitedly from branch to branch about us, "twittering" softly we left. My next visit to the nest found Miss Dedrick and Dr. G. R. La Rue there ahead of me, laying plans for the construction of a tower blind to be done by the station's work crew. I made a few measurements (See Technical data) of the nest, eggs and also determined that the nest was just nine feet from the ground and six and one third feet from the trunk of the tree. The construction and materials of the nest were practically the same as the preceding two nests and Miss Dedrick reported that tho' the male was in attendance during the building, it was the female that did the work.

The next day the blind platform was constructed and placed near the nest, without causing the female to leave the eggs at any time. That evening the tent cloth was placed on the platform and left there for a day or so. Soon after tacking up the cloth a cowbird's egg was deposited in the nest making the total number of eggs three.

One of the flycatcher eggs seemed to be added just about the time when we expected hatching to occur. The cowbird egg hatched first and as the three-quarter shell that was left covered one of the smaller eggs Miss Dedrick mistook the hatchling to be that of a flycatcher. Soon after that, the 15<sup>th</sup> of July to be exact, the "good" flycatcher egg hatched and the following day I took measurements of both the young cowbird and the other nestling. There was considerable down on the latter but the dark sheathing was already beginning to show. The view from the blind was a good one - the peephole only being about thirty-three inches from the nest & the elevation of the platform was about eight feet so that one was practically looking directly down

into the nest. Within the next few days Miss Sedrick reported a red squirrel at the nest, but it did no damage then but the next time I came back to the nest to do some really close observation of the behavior of the female and the male (which by the way was very seldom seen) I discovered an empty nest with no "chebecs" to greet me. Evidently the pesky, red-haired, rodent had come back.

The last of the series of nests that I have more or less observed, Nest "D", was also located on the cleared hillside back of the cabins but to the east between Manville's the group of laboratory buildings. The site of this nest was a crotch between the two branches of main trunk twelve feet from the ground. I used a step ladder to look in nest upon my first visit on July 11<sup>th</sup> 1933 and found four eggs. This nest was the first <sup>nest</sup> that I have ever seen next to the trunk of a tree. They are usually found <sup>very</sup> fairly far out on a branch. However the tree being a ~~black~~ birch and the nest being so heavily trimmed with that bark that it was very well camouflaged in my estimation. Only one parent bird was in attendance at that time and during the entire observation there was never more than one bird in the vicinity, no doubt the female in most cases. I took a record of the nest and the necessary measurements. (See Technical Data)

As I was kept fairly busy with some of the other nests I didn't take the time to have a tower brought to this particular nest for a more extensive observation, but merely checked up on it from time to time to see how things were progressing and mostly to see if that friend of a *Sciurus* had found his way to this nest.

On July 20<sup>th</sup> I approached the nest and having no step ladder started to climb the tree when suddenly one of the young climbed up to the edge of the nest & flew down the hill towards the road. I kept my eye on the spot where I thought he landed

and after a little search I found him huddled close  
the ground in <sup>(See p. 10)</sup> the tall grass. After taking back to the cabin  
for measurements <sup>(See p. 10)</sup> I looked up Miss Ester Rodgers  
and we went out on to the beach and photograph-  
ed him. (See Illustrations) At 10:00 AM. I placed  
the little bird on one of the lower branches of the nest  
in which the tree was located and after much trouble  
I managed to get it to remain there. When I passed  
by there five hours later he was in the same position.  
The other young were still in the nest at this time.  
From the measurements I judged that this nestling  
was about eleven or twelve days old.

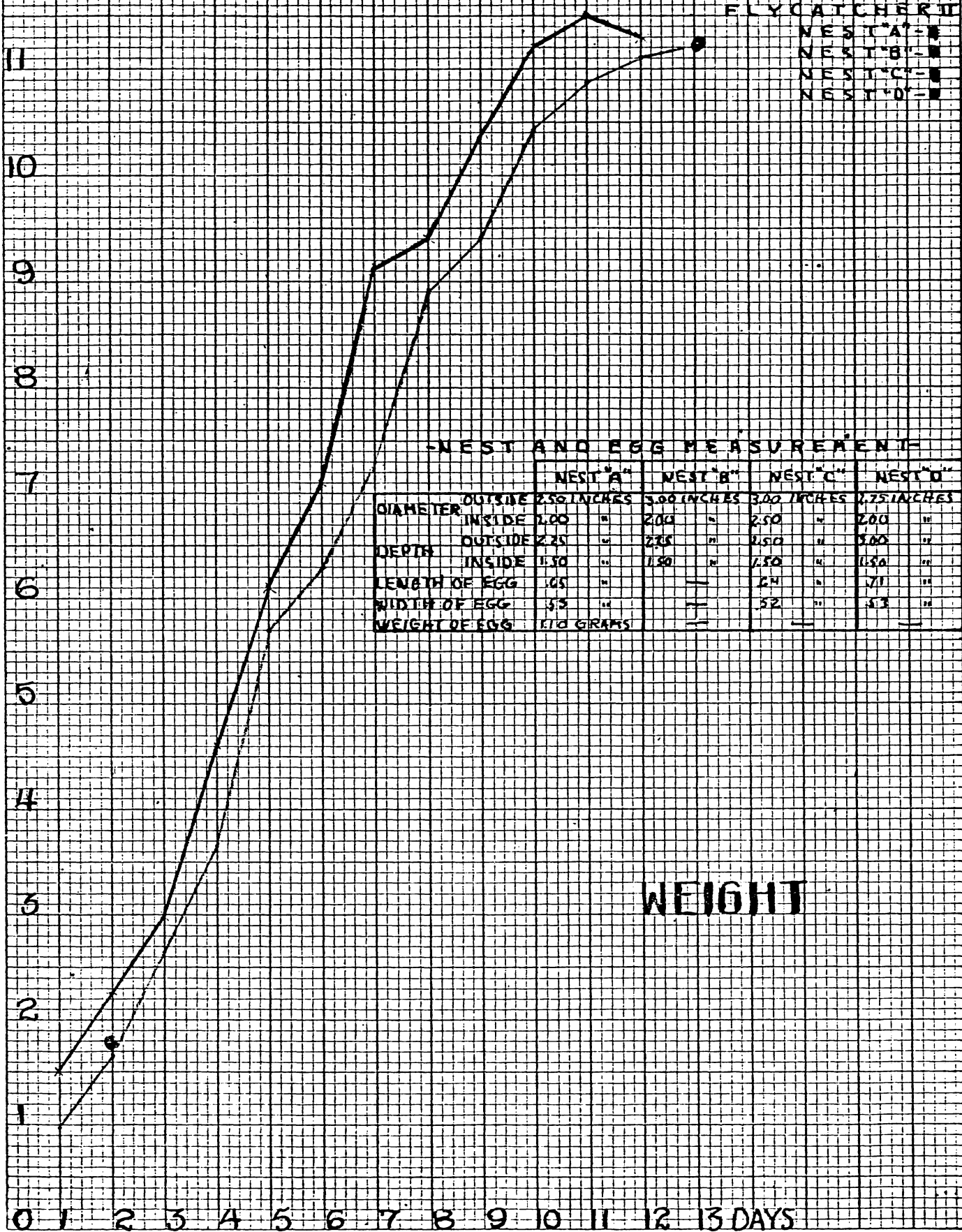
About nine o'clock the next morning I revisited  
the nest and by gently shaking the tree a little I  
induced the last lingering young to embark  
on its "maiden voyage" which consisted of fluttering  
flight in a long arc of about one hundred feet  
or so. I soon found it <sup>and after taking the</sup>  
proper measurements <sup>with my tape 12 1/2 x 1/2 x 1/2 deep</sup> found upon close exami-  
nation that the the primary feathers were about  
one half unsheathed. The tail feathers were very  
short and only the down over the eyes remained.  
It was rather a quiet individual and thus  
I placed it on a rubber cracker and it posed very  
nicely for me as I attempted to draw a sketch  
of it. At nine thirty in spite of the fact that  
there was a steady down pour of rain I carried  
the little one back to the tree and placed him  
in identically the same position that I had placed  
the other bird the day before. He remained the quiet-  
ly making no effort to fly. The adult or adults  
and other young could be heard "chirping" near  
by, but when I returned at twelve o'clock  
I saw nor heard any of them & I realized that  
my work with that nest was over.

From that time on I made frequent searches  
in the vicinity for other Least flycatcher nests  
and at one time Miss Ledrick and I arose at  
4:45 AM in a vain effort to find new nests  
around the immediate region of the station.

12 GMS.

**TECHNICAL DATA**

- LEGEND**  
 FLYCATCHER I  
 NEST A - ■  
 FLYCATCHER II  
 NEST A - ■  
 NEST B - ■  
 NEST C - ■  
 NEST D - ■



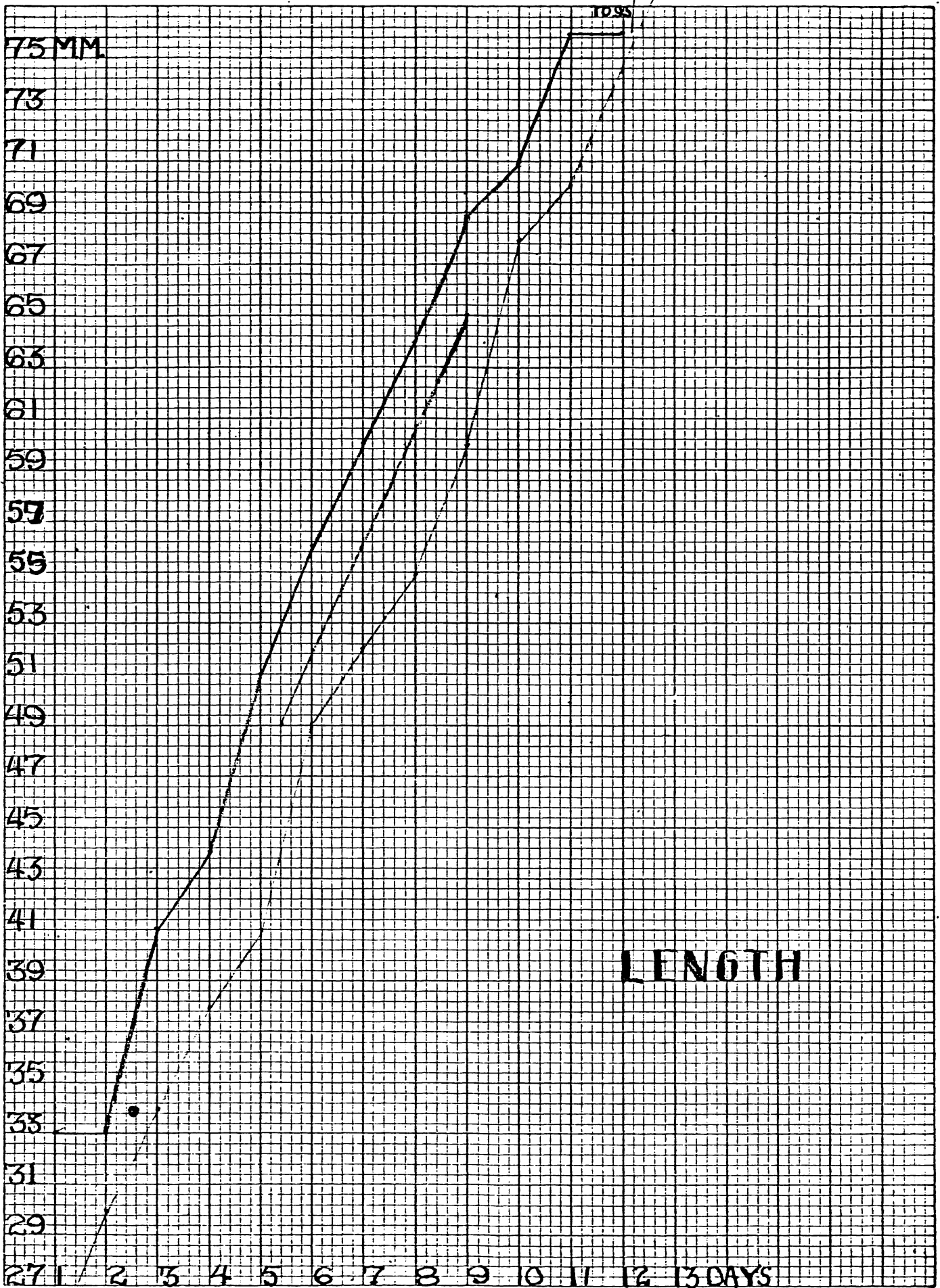
**-NEST AND EGG MEASUREMENT-**

		NEST "A"	NEST "B"	NEST "C"	NEST "D"
DIAMETER	OUTSIDE	2.50 INCHES	3.00 INCHES	3.00 INCHES	2.75 INCHES
	INSIDE	2.00 "	2.00 "	2.50 "	2.00 "
DEPTH	OUTSIDE	2.25 "	2.75 "	2.50 "	3.00 "
	INSIDE	1.75 "	1.50 "	1.50 "	1.50 "
LENGTH OF EGG		.65 "	---	.64 "	.71 "
WIDTH OF EGG		.55 "	---	.52 "	.53 "
WEIGHT OF EGG		1.10 GRAMS	---	---	---

**WEIGHT**

0 1 2 3 4 5 6 7 8 9 10 11 12 13 DAYS







**BILL**



3MM

2

1

0

9

8

7

6

5

2

3

4

5

6

7

8

9

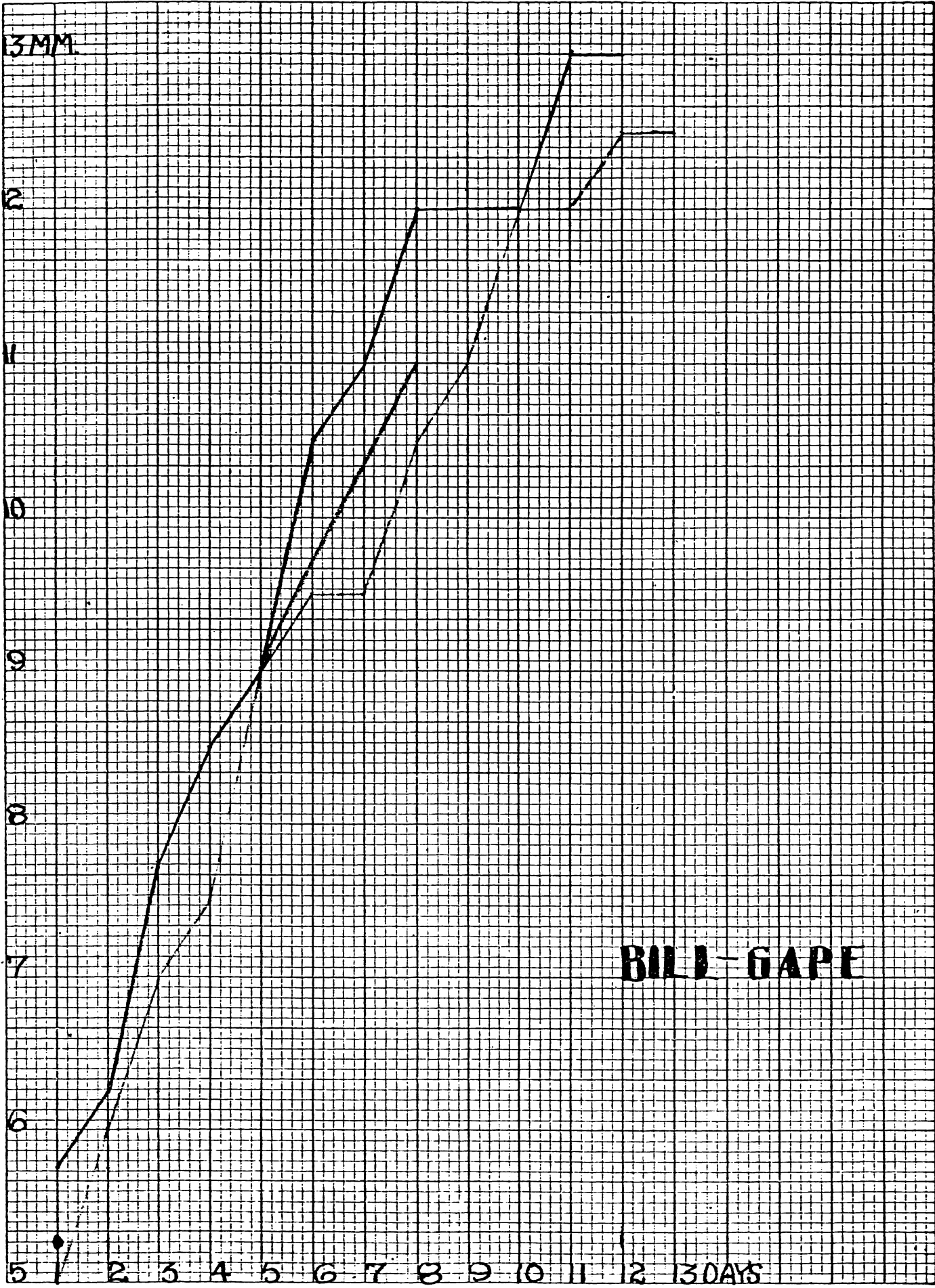
10

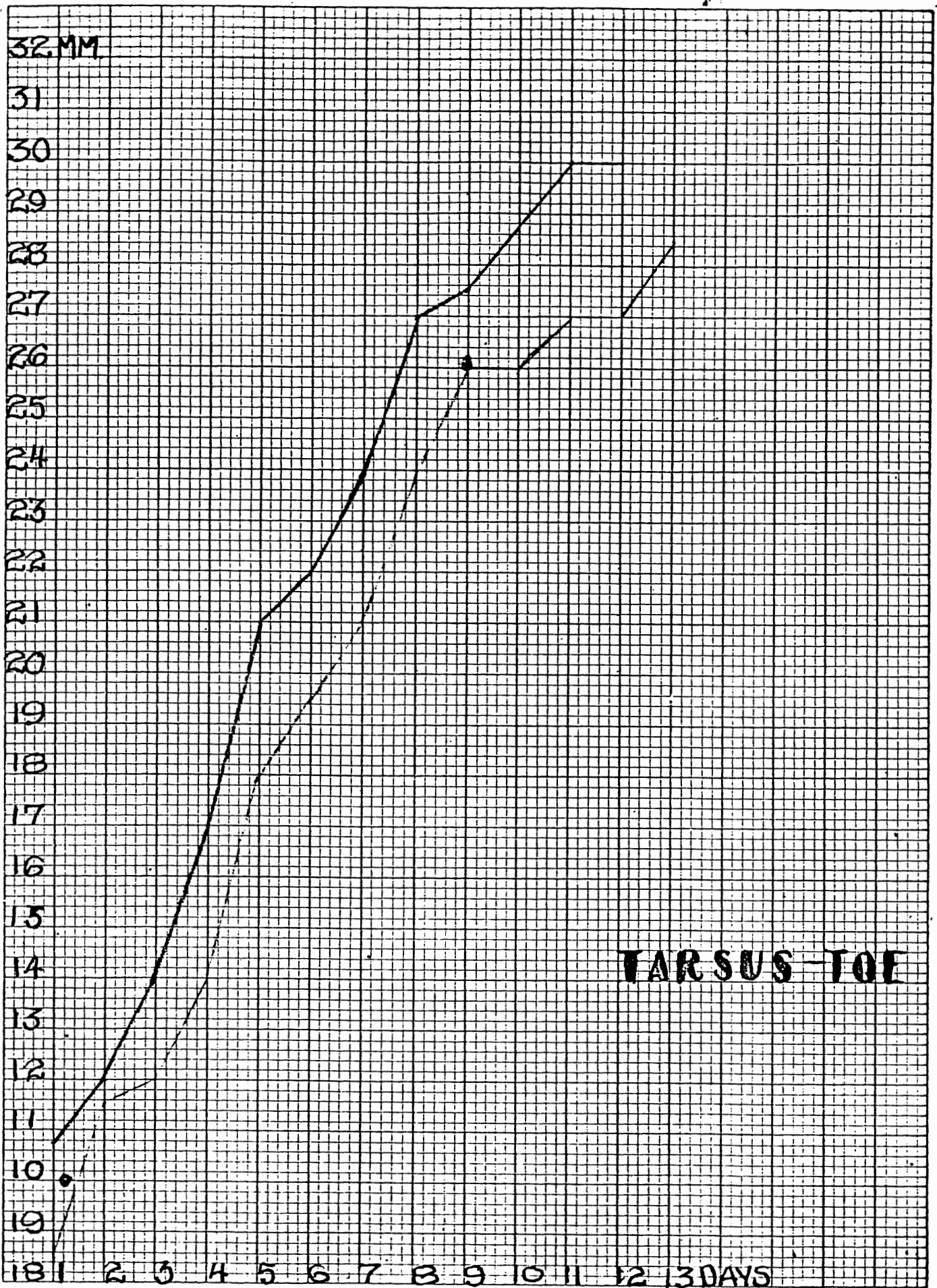
11

12

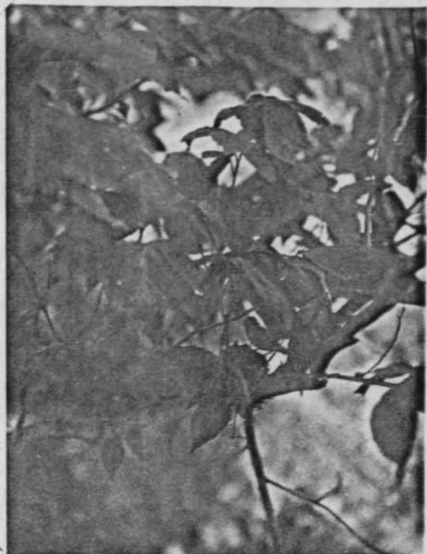
13 DAYS

**BILL-GAPE**





ILLUSTRATIONS



MALE FEEDING YOUNG



FEMALE AT THE NEST

PHOTOGRAPHY  
BY  
GERTRUDE M. GRANT



NEST "A"

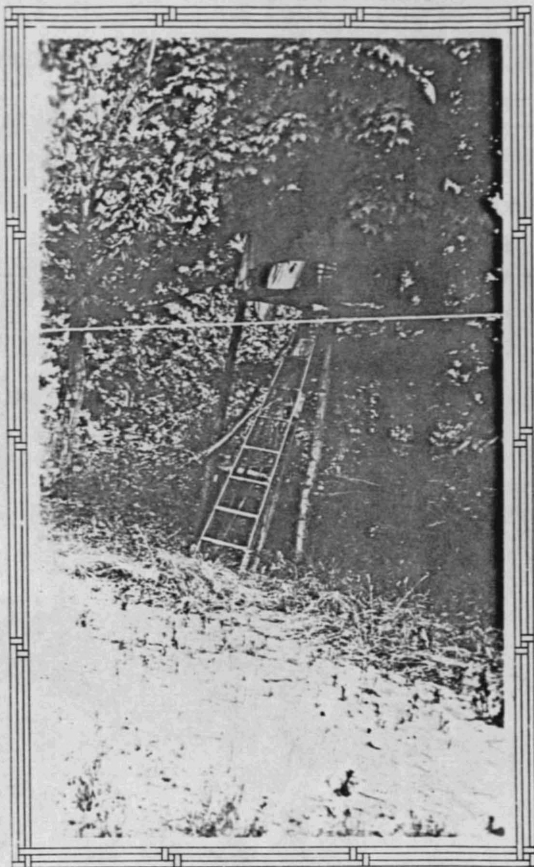


FEMALE LEAST FLYCATCHER BROODING

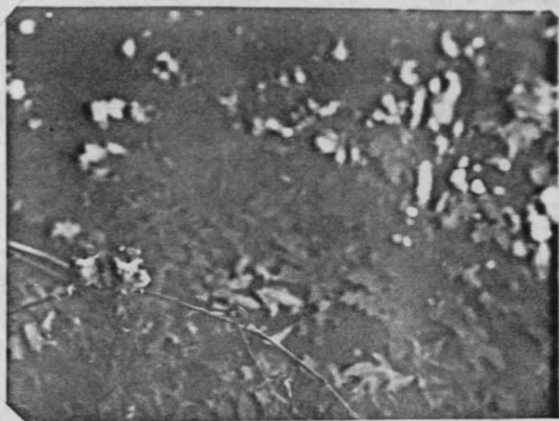


NOTE:  
EXAMINE WITH LENS





PHOTOGRAPH  
BY  
FRANK J.  
HINDS



"LEAST FLYCATCHERS I<sup>A</sup> No. II" - NEST "A"

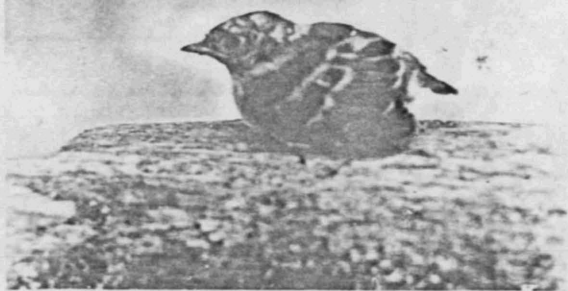
TOWER BLIND AT NEST "A," WHICH IS  
JUST TO THE LEFT OF THE  
TENT CLOTH



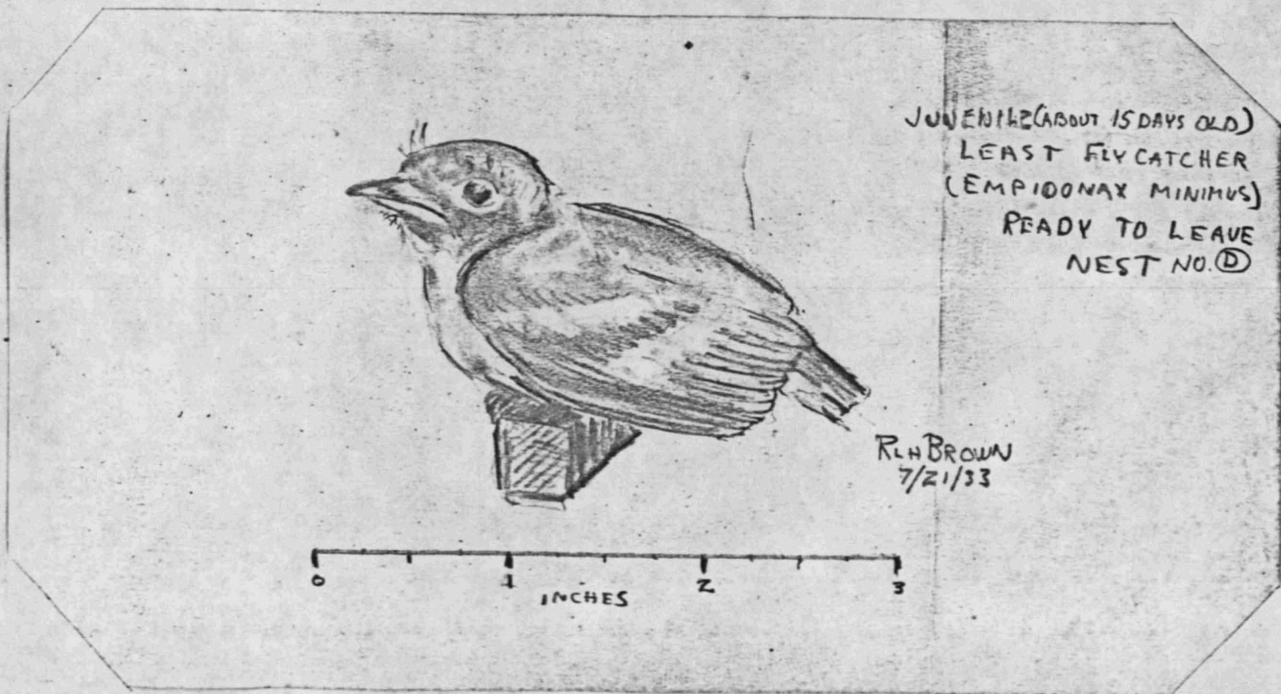
JUST ELEVEN DAYS OLD



PORTRAITS  
BY  
ESTHER  
RODGER



THE FIRST OF THE YOUNG TO LEAVE NEST "D"



- ADDITIONAL OBSERVATIONS -

After completing my work on the East, I decided that it might be a good idea to check upon a few of the other flycatchers of this region. Of course, the Pewee and the Kingbird could be observed very easily, but I thought that it would be more interesting to find a bird a little less common. On July 27 I "bummed" my way by launch with the Entomology ~~club~~ class under Dr. H. B. Hingertford to the other end of Douglas Lake at Ingleside. From there I set out walking eastward, crossing Pessey Creek, till I reached a burnt-over area with a lot of Alder (*alnus incana*) thickets. There I sat down and waited to listen what birds notes might come to my ear. At first nothing but Song Sparrows and Northern Yellow-throated Vireos greeted me but it was not long before heard exactly what ~~the mellow~~ I had come for - the mellow "cre-bee", faint and distant, I listened again to make sure. Yes, there was no doubt in my mind and I headed in the direction of the sound. I had not gone far before another similar sound started up in a different direction and soon another, until there were sounds coming from all four directions. The Alder Flycatcher (*Empidonax traillii*, known ~~was~~ evidently well established here this year, I thought. I had seen them here and at Duncan Bay in previous years but I had never had much more than a fleeting glance at them, so decided to acquaint myself a little more with them. At least as far as appearances were concerned. Finally, after climbing over <sup>under</sup> logs and thru bushes I managed to get right in the center of an Alder Thicket, but with a clear view over a tall, over-look-  
ing dead tree. Glancing up I noticed a small bird suddenly fly up from the thicket to the very top of the aforementioned tree. I focused my glasses on that spot. Altho the tho top of Alder Flycatcher was on my mind, the close resemblance to the Least made me hesitate. This <sup>certainly</sup> was not a typical habitat for the latter. Suddenly the bird threw back its head and the characteristic "cre-bee-a" was emitted. Well! That settled that question, but just how did this little bird differ from this more common

