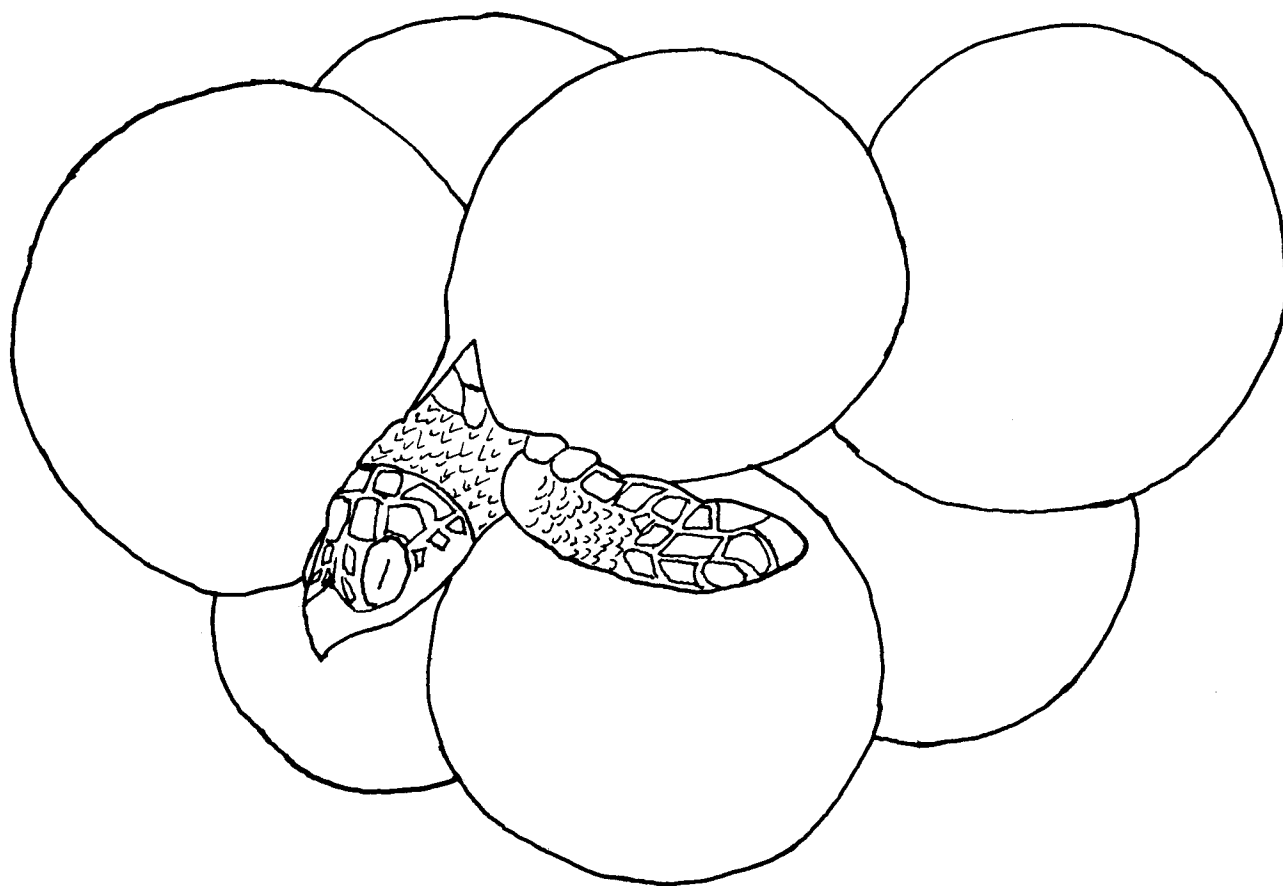


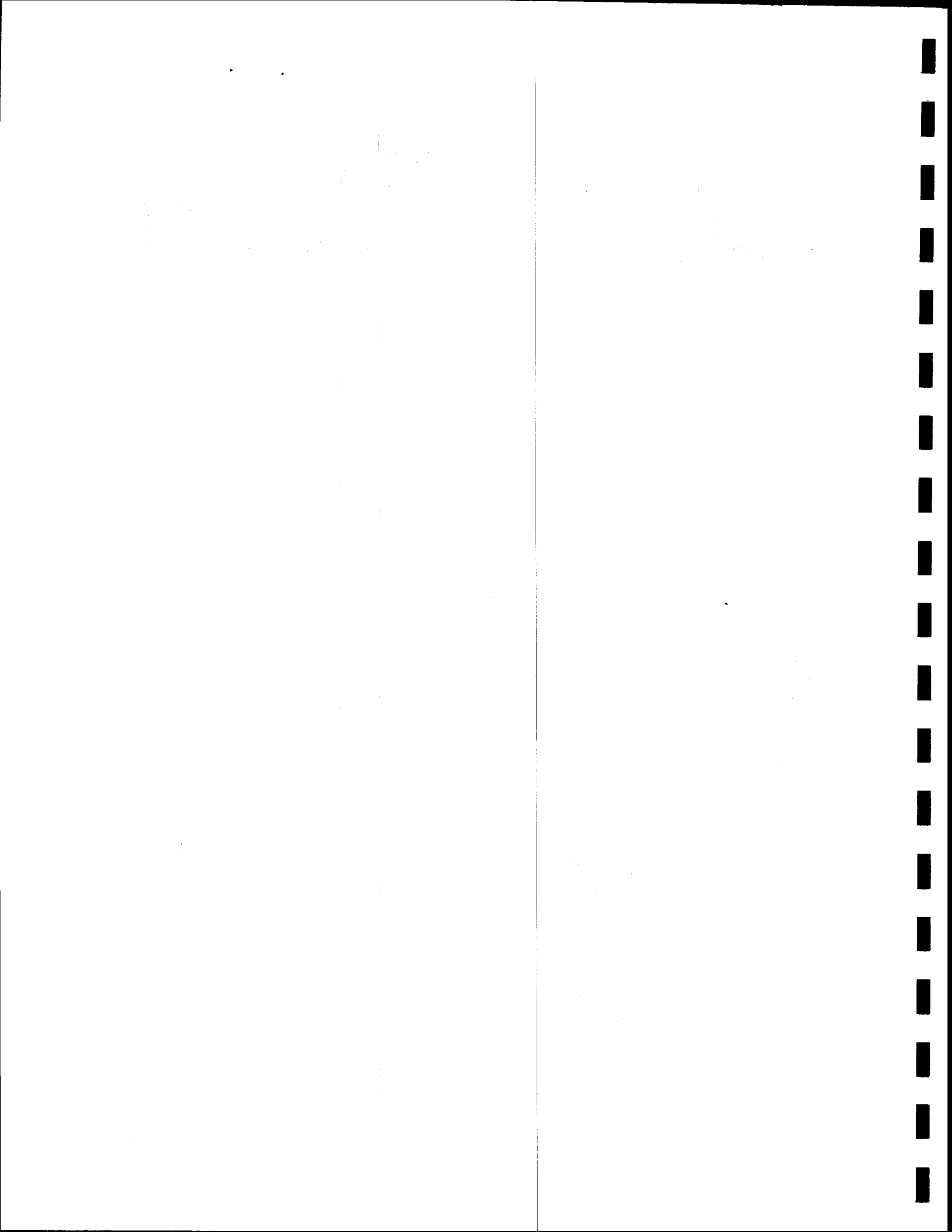
PADRE ISLAND NATIONAL SEASHORE

1984 REPORT

*Kemp's Ridley Sea Turtle
Restoration and Enhancement Project,
Incubation and Imprinting Phase*



National Park Service
Department of the Interior



1984 REPORT
KEMP'S RIDLEY SEA TURTLE
RESTORATION AND ENHANCEMENT PROJECT
INCUBATION AND IMPRINTING PHASE

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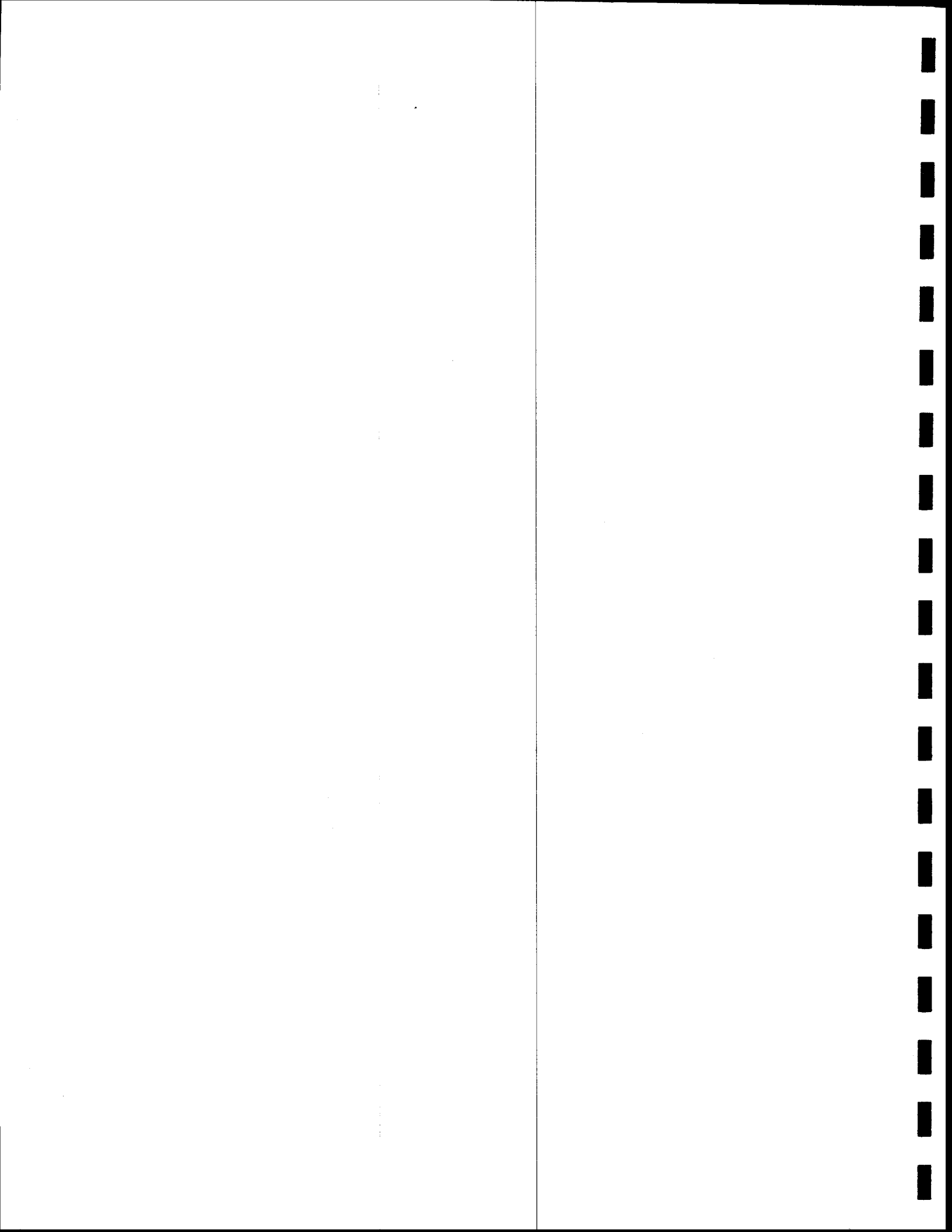


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SUMMARY

A total of 1,976 Kemp's Ridley sea turtle eggs were received at Padre Island National Seashore on 13 July 1984. Incubation of these eggs resulted in an overall hatching success of 90.7% (Table 1). Nine hatchlings died prior to imprinting, nine escaped through the surf during imprinting, 230 died after imprinting, and the remaining 1,544 were transported to the National Marine Fisheries Laboratory, Galveston, to participate in the Head-Start program. After imprinting, 844 hatchlings were live-tagged by John and Lupe Hendrickson (University of Arizona at Tuscon). Unhatched eggs were preserved and examined for embryological development. In addition, the length and weight of each hatchling was recorded and compared to similar data from 1980, 1981, 1982 and 1983. The 1984 program was completed on 27 July 1984.

GENERAL

At 0100 hours on 13 July 1984 Padre Island National Seashore received 19 styrofoam boxes (1,976 eggs) of Kemp's Ridley (Lepidochelys kempii) sea turtle eggs from Playa de Rancho Nuevo, Tamaulipas, Mexico, via U.S. Fish and Wildlife Service contract aircraft. Each styrofoam box contained a single clutch of eggs. The styrofoam boxes then were transported to the National Seashore Biological Field Station and each box was opened and examined. The top layer of eggs was covered with plastic window screen and a final layer of Padre Island beach sand. Thermocouples which had been placed in each of the three layers of eggs during loading in Rancho Nuevo (Table 2) were connected to a CR-5 multi-channel digital recording thermograph which provided 24 hour monitoring of clutch temperatures at one hour intervals (observations began at 1600 hours 13 June 1984). Clutch moisture was closely monitored via the "pie-crust" pinch technique with distilled water used to maintain "proper" sand moisture. The eggs were left to incubate. The clutches were checked for hatching periodically around the projected end of incubation (Table 3). When hatching was detected, the thermocouples along with the plastic screen and surface sand were removed. Hatching was then allowed to proceed uninterrupted (Table 4). To alleviate overcrowding during the hatching process active hatchlings were transferred to holding boxes to await imprinting (Table 5). The turtles were imprinted to the Padre Island beach consistent with previous years, ie. once active in the holding boxes, they were placed on the beach and allowed to crawl approximately fifty meters to the surf where after a brief swim they were collected (Table 6). Once imprinted the turtles were weighed, measured and placed in tubs of Laguna Madre bay

water to await transport to the National Marine Fisheries Laboratory in Galveston. Prior to shipment the majority of individuals from eight clutches and all individuals from two clutches (844 total) were live-tagged by John and Lupe Hendrickson. Also, 100 hatchlings, picked at random from 10 clutches, were placed within growth study chambers and were weighed and measured daily. The results of this study were inconclusive and will not be presented. All hatchlings were held at Padre Island for less than seven days before transport to Galveston. Two transport flights were conducted by Training Air Wing Four, Training Squadron VT 28 and VT 31, Corpus Christi Naval Air Station and one shipment of hatchlings was driven to Galveston by Padre Island staff. On 27 July 1984 the last hatchlings were transported to Galveston completing the Service's involvement in the seventh year of this ten year restoration project.

PERSONNEL

Park Biologist Robert King was responsible for the National Park Service - Padre Island National Seashore portion of this project. Park Technician Donna Shaver (fifth year with the project) and Student Conservation Association Intern Kelly Phillips (first year) collected all data and coordinated the imprinting process.

INCUBATION OBSERVATIONS

During April 1984, 20 styrofoam boxes were purchased to replace the six year old incubation boxes. The old incubation boxes had 12mm thick walls and an internal volume of 15,570cm³. The new incubation boxes have 22mm thick walls and, in their original size, an internal volume of 23,250cm³. For transportation considerations these new boxes were modified to contain 16,390cm³ of interior space. After modification the boxes were rinsed and allowed to soak in fresh water for four days. After soaking 88 holes of 6mm diameter were drilled in each box; 30 in each bottom and top, eight through each length and six through each end.

On 9 May 1984 ten five-gallon buckets were filled with moist Padre Island beach sand and each was sealed with a lid. This sand was collected from the embryonic dune area of the Closed Beach adjacent to the Gulf Ranger Station, Padre Island National Seashore, from a depth of not more than six inches. These 10 buckets and the 20 modified styrofoam incubation boxes were transported to Gladys Porter Zoo, Brownsville, Texas on 10 May 1984 to await shipment to the Ridley nesting beach at Playa de Rancho Nuevo, Mexico. On 18 May 1984 another 10 buckets were filled with sand from the same Padre Island beach area. This sand was laid out in flat shallow boxes to dry in the Padre

Island greenhouse at approximately 37°C. After six days the sand was re-packed and the 10 buckets were sealed. On 24 May 1984 the sand was transported to Brownsville to await shipment to Rancho Nuevo where it would later be mixed with the sand from the first 10 buckets (Pat Burchfield, personal communication) just prior to its introduction into the incubation boxes.

At 0100 hours on 13 July 1984, 19 styrofoam boxes, each containing one clutch of eggs, arrived at Padre Island National Seashore. Each box was immediately opened and examined. At this time the sand in all incubation boxes appeared to be drier than in previous years and visible eggs were white and appeared to be viable.

A plastic-coated screen and a final layer of moist Padre Island sand were applied over the eggs in each box. Eggs were left to incubate, but were periodically checked for moisture content by the "pie-crust" pinch technique. Due to the large number and size of holes in the lids of the incubation boxes the top layers of sand dried more rapidly than in previous years and much of the sand fell through the plastic-coated screens. Small amounts of water were added to a total of 12 incubation boxes because the upper layers of sand were found to be too dry and would have fallen through the screens without additional moisture. Approximately 125ml of distilled water were added to boxes 513, 766, 768, 769, 770, 771, 772, 773, 774, 775 and 798 on 16 July 1984 and to boxes 513, 514, 768 and 770 on 17 July 1984.

Incubation and hatching proceeded with few unusual events and an overall hatching success of 90.7% occurred. A few brown flies of the same type found during previous years were seen in box 512 after hatching began but were not found in any other boxes.

The extremely rapid hatching of five clutches (513, 514, 765, 775, 798) is noteworthy. Only one clutch during the past five years (from 1981) has been observed to hatch as rapidly. The following is a detailed account of the observations for these five clutches.

On the morning of 18 July 1984 very early stages of hatching were detected in boxes 513, 514, 775 and 798. The screen, top layer of sand and much of the sand overlaying the uppermost layer of eggs were then removed from each of these boxes. They were checked frequently throughout that day and evening and hatching appeared to proceed slowly. At 2300 hours no emergence was detected and only minimal cracks in the top layer of sand were present. However, at 0300 on 19 July 1984 many hatchlings were heard moving within these four boxes. The boxes were immediately opened and found to contain numerous highly active hatchlings. Turtles from these boxes were counted and transferred to boxes containing a 50mm layer of Padre Island sand. The incubation

boxes were then cleared of most sand and empty egg shells and were examined for unhatched eggs and/or trapped hatchlings. Only one hatchling was found beneath the sand in incubation box 514 and no hatchlings within the other boxes. Unhatched eggs were found in all boxes and were left undisturbed to incubate for a few days to allow for any possible late hatching individuals. All hatchlings except the one trapped individual from box 514, which had not fully absorbed it's yolk sac, were imprinted on the morning of 19 July. This sequence of events seemed very unusual since hatching usually takes two to three days from the time of detection until the time hatchlings have fully absorbed their yolk sacs and are transferred and since the transferred hatchlings are almost always sluggish and must remain in their transfer boxes for at least one day before they are active enough to be imprinted.

Incubation box 765 later hatched with similar abruptness. No hatching was detected during periodic checks which ceased at 1500 hours on 19 July 1984. However, at 0700 on 20 July 1984, when staff members returned to the laboratory, the eggs were found to have hatched and the fully emerged hatchlings were highly active. Unfortunately, eight hatchlings had escaped from the incubation box, fallen to the floor and died before the staff had arrived that morning. The remaining hatchlings were transferred and imprinted later that morning. No hatchlings were found trapped beneath the hard-packed sand in the incubation box.

All unhatched eggs from each clutch were allowed to incubate for approximately two days after the last hatchling transfer. At that time the unhatched eggs were counted and injected with F.A.A. solution for preservation. Unlike many unhatched eggs from 1983 no red fluid was exuded from any eggs as they were injected and the F.A.A. solution in the jars containing the eggs remained clear.

INCUBATION TEMPERATURES

Three thermocouples (top, middle and bottom layer of eggs) were installed in all of the clutches during egg loading of the styrofoam boxes at Rancho Nuevo. All probe connections extended through the sides of the incubation boxes to facilitate data collection and prevent unnecessary manipulation of the boxes. Upon arrival these temperature probes were connected to the CR-5 thermograph. The CR-5 can accomodate only 50 separate temperature probes, so priority connection is given those clutches which will yield the most data, ie. boxes least advanced in incubation (Table 2). The incubation boxes arrived at 0100 on 13 July but due to thermogagraph malfunctions temperature recordings did not begin until 1600 hours. All clutches arrived in the advanced stage of incubation and consequently no middle

third incubation temperatures were recorded at Padre Island. Metabolic heat production maintained all incubation temperatures above ambient, though diurnal cycling was still apparent (Appendix I).

Because metabolic heat production is variable, depending upon both viability and incubation stage of the clutch, each box was considered separately for the purposes of statistical analysis. Analysis of variance performed upon the temperature readings recorded from the three probes in each box showed that in every clutch the three readings differed significantly ($P \leq .001$). The Student T-Test was then used to compare all possible pairs of probes from each box to determine which probes were similar and which were different from each other. In every incubation box except two (515 and 799) the top probe recorded a significantly cooler temperature (Adv. 0.7°C cooler) than either the middle or bottom probe ($P \leq .001$).

There are several possible explanations for these findings: the first is that temperature flow through the styrofoam box is not uniform, however similar analysis performed upon the 1983 clutches indicated that, in the lack of metabolic heat production, temperature flow through all three layers of eggs was not significantly different. The second and probably the real reason for the significantly lower temperature recorded by the top temperature probe is that clutch temperature in the top layer of eggs was significantly lowered by the repeated observations necessary to detect the beginning of hatching.

Clutch examination entails opening the styrofoam box and lifting the screen and top layer of sand in an effort to detect the beginning of hatching. Because of the small size of the incubation box, which is necessitated by transportation considerations, hatching detection is very important. Upon hatching the screen and top layer of sand are removed to allow hatchlings to be transferred to holding boxes to await imprinting and to alleviate overcrowding and allow bottom layered hatchlings vertical space. Though this is not a natural occurrence, it does compensate for the lack of drainage and horizontal expansion potential customary in styrofoam boxes and absent in natural nests. It can be argued that this operation exposes the unhatched eggs to some degree of thermal shock and thereby reduces overall hatching success of the clutch. There is, at present, no evidence to support this argument, however 1978 and 1979 year classes appeared to suffer some hatchling loss attributed to crowded conditions in the incubation boxes.

Box 515 and 799 must have either not been checked as frequently as the other boxes, or if they were, there must have been sufficient time to allow the temperature to build up prior to thermograph recording. The 0.7°C cooler incubation temperatures

recorded for the top layers of eggs appears to have had no effect on hatching success as very few top layer eggs failed to hatch.

HATCHLING HANDLING AND DEATHS

Hatchlings were released for imprinting on seven separate days between 19 and 27 July 1984 (Table 6). After re-capture the hatchlings were returned to the laboratory where weight and straight line carapace length were recorded for each animal and each clutch was counted and superficially examined for deformities. During weighing and measuring 10 animals were selected at random from each of the first 10 imprinted clutches to participate in a growth study. These selected animals were transferred to individual study chambers. The remaining animals from each clutch were placed in tubs of Laguna Madre water to await live-tagging by John and Lupe Hendrickson.

The growth study hatchlings were not live-tagged. The weight and straight line carapace length of each animal was recorded daily, however the experiment was terminated after 6 days and all animals were transported to Galveston.

The growth study chambers measured 12.5cm long x 6.5cm wide x 5.0cm high and received a constant flow of sea water from a recirculating water system which consisted of a PVC delivery system supplied by a submersible pump located in a 1.5m long x 0.6m wide x 0.6m high reservoir. The reservoir was filled with Laguna Madre bay water on 13 July 1984 and was replenished twice a week until 25 July 1984. No attempt was made to determine the salinity of this water until after the turtles were shipped to Galveston on 25 July 1984. On 29 July 1984, with the use of an AO model 10419 salinity refractometer on loan from Texas A&I University in Kingsville, the Gulf of Mexico (imprint site), Laguna Madre (water collection site) and the remaining sea water in the recirculating reservoir was found to be 34, 46 and 69ppt, respectively.

All hatchlings not held in growth study chambers were placed in 44cm long x 32cm wide x 12cm tall tubs containing Laguna Madre bay water approximately 3cm deep. During the first three days that imprinting was conducted, entire clutches (minus the 10 individuals held in growth study chambers) were placed within one tub. Later, as more clutches hatched and were imprinted, each clutch was divided in half and placed into two tubs in order to alleviate overcrowding. The water within the tubs was obtained from the above described reservoir, was changed daily and was not mechanically circulated.

John and Lupe Hendrickson live-tagged a total of 844 hatchlings from 10 clutches. All hatchlings from clutches 765 and 766 were

live-tagged, as well as 70 hatchlings from clutch 797 and all hatchlings from clutches 512, 513, 514, 515, 775, 776 and 798 which were not held in growth study chambers (Table 7). The live-tagging operation consisted of removing a small plug from the carapace and plastron of a hatchling, reversing the plugs and applying a drop of superglue over the plug and adjacent shell surface areas. Graftings were performed from a few hours up to three days after hatchlings had been imprinted (Table 7). After hatchlings were tagged, they were returned to tubs of water and were held at Padre Island from three to six days before being shipped to Galveston.

Imprinted hatchlings were held in tubs from one-half day to six days and in growth study chambers from three to six days before they were sent to Galveston. On 24 July 1984 all of the hatchlings from clutches 512, 513, 514, 515 and 776 which were held in tubs and all hatchlings from clutches 765, 766 and 775 were transferred to Galveston. The next day, hatchlings from clutches 512, 513, 514, 515 and 776 (which were held in growth study chambers) and all hatchlings from clutches 767 through 774, 797 and 798 were also sent to Galveston. All of clutch 799 was shipped on 27 July 1984.

A total of 239 hatchlings died at Padre Island National Seashore; nine before imprinting, two in growth study chambers and 228 in tubs or cardboard shipping boxes (Table 8). Three imprinted hatchlings died on 20 July 1984, four on 21 July 1984, 10 on 22 July 1984, 49 on 23 July 1984 and 164 on 24 July 1984 (Tables 7 and 8). Dead hatchlings were placed in plastic bags and were refrigerated until they were dissected or sent to be autopsied.

Eleven dead hatchlings were removed from refrigeration, packed in ice and shipped to the Texas Veterinary Medical Diagnostic Laboratory at Texas A&M in College Station to be autopsied (Table 9). The major organs from 11 other dead hatchlings were removed, placed in 10% buffered formalin and sent to the University of Miami School of Medicine to be necropsied. The results of these examinations were inconclusive as to the cause of death. Wide spread hepatic lipidosis, abdominal bacterial infection and localized inflammation at the graft site were the principal findings in both studies. The reports from these analyses are included in this report (Appendix II). Staff members at Padre Island National Seashore removed the kidneys and gonads from 209 remaining dead hatchlings and placed them in 10% buffered formalin for later sexual determination. No turtles were left in refrigeration for more than half a day before they were sent to be autopsied or six days before they were dissected.

HATCHLING LENGTH AND WEIGHT

Immediately following imprinting, straight line carapace length and weight of each hatchling were recorded. The animals were then placed in holding tubs to await live tagging. The results of these activities are presented in Table 10. These results are also presented for comparison with recorded lengths and weights of previous years hatchlings in Table 11. Straight line carapace length and weight raw data by clutch is presented in Appendix III. Straight line length and weight frequency histograms, by clutch, as well as for the entire year class are presented in Appendix IV.

A comparison of both straight line carapace length and weight between year classes 1983 and 1984 using the Student T-Test was conducted. This test showed the 1984 year class to be significantly larger and heavier than the 1983 class ($P \leq .001$). The 1983 year class sustained a hatch rate of 12% and appeared to suffer from excessive incubation moisture which resulted in widespread fungal infection and egg mortality. The 1984 class received newly designed incubation boxes allowing increased air exchange as well as much drier initial incubation sand. These changes may be responsible for the significant increase in size and weight shown by the 1984 class.

A comparison of clutch mean lengths using the GT2-method (Sokal and Rohlf 1981) was conducted for the 1984 year class. This unplanned comparison method is preferred for unequal sample sizes over other similar comparison procedures. The results of this test are graphically presented in Figure 1. Comparison intervals, at the 95% level, for each clutch mean are shown. Clutches whose intervals do not overlap are significantly different. Clutch mean straight line carapace lengths have always been variable. The variations shown by the GT2-method were not suprising given that analysis of variance (one way ANOVA) performed on both straight line carapace lengths and weights of this year class showed there to be more variation between clutches than within each clutch ($P \leq .001$). Given the similarity of both handling and incubation, these differences undoubtedly reflect natural variation within the population.

The straight line length and weight frequency histograms for each clutch and those for the entire year class are representative of normal distributions. The total year class weight histogram is slightly skewed to the right similar to findings from the 1983 year class.

ANALYSIS OF UNHATCHED EGGS

Unhatched eggs were preserved by injection with and storage in F.A.A. solution. These preserved eggs were examined and developing embryos isolated within one month of fixation. The embryos were compared to developing stages of the Olive Ridley, Lepidochelys olivacea (Cratz 1982) to determine approximate developmental stage and time of death during incubation. This is a continuation of a voluntary study undertaken by Dr. Allan H. Chaney (Texas A&I University) and biologist Donna Shaver in which unhatched eggs from 1980, 1982 and 1983 were examined.

Unhatched eggs from all four years were examined using the same methodology. Each egg was opened and examined for signs of yolk digestion and the presence of embryonic membranes. All embryos were removed and those which had not greatly deteriorated were classified within embryological stages of development described for the Olive Ridley (Cratz 1982) or stages 27-28, 28-29, 29-30 or 30-31 which we established for Kemp's Ridley embryos which fell between those late stages of development described for the Olive Ridley. Embryos were also inspected for obvious external deformities and were stored in 45% isopropyl alcohol. On the basis of this examination the eggs and embryos were classified into one of the following categories:

Eggs in which no embryos were found

1. Infertile: eggs which showed no signs of yolk digestion and no change in yolk texture and which possessed a round yolk shape and no embryonic membranes
2. Fertile: eggs which contained embryonic membranes, which showed a change in yolk texture and signs of yolk digestion and in which either embryonic development had ceased very early in incubation or the embryos had deteriorated and could not be found
3. Rotten: eggs which could not be classified as either fertile or infertile because their yolks had either deteriorated or been consumed or disturbed by maggots

Eggs in which embryos were found

1. Staged embryo: embryos which were placed within one of the embryonic stages of development described for the Olive Ridley by Cratz(1982) or within stages 27-28, 28-29, 29-30 or 30-31 which we established for Kemp's Ridley embryos
2. Rotten embryo: embryos which could not be staged because they had greatly deteriorated

In addition, the 1983 and 1984 unhatched eggs were examined for signs of fungal infection and a subjective index was applied to each according to their degree of yolk discoloration.

A total of 184 of the 1,976 eggs received at Padre Island National Seashore in 1984 failed to hatch. None of these eggs were categorized as containing fungal infection since their yolks lacked discoloration characteristic of fungal infected eggs of 1983. Thirty-nine eggs were classified as infertile and 59 as fertile. Eleven could not be classified because they had deteriorated and were rotten (Table 12). Of the 75 embryos isolated 72 were embryologically staged (Table 13). The earliest distinguishable development was that of stage 3 (approximately three days of development) and the latest was stage 30-31 (approximately 50 to 55 days of development).

Eleven staged embryos were found to be deformed (Table 14). The earliest stage in which a deformed embryo was detected was stage 10 (approximately 10 days of development). All other deformed embryos appeared in much later stages. Most deformities, as noted in previous years, affected the head, carapace and flippers. Although no systematic investigation of hatchling deformities was made during 1984, deformed individuals were noted in clutches 512 and 776, both of which also contained deformed embryos.

The results of these analyses were compared to those conducted on 1980, 1982 and 1983 unhatched eggs (Tables 15 and 16). However, the conditions and methods of preservation of eggs from previous years must be noted and considered when such comparisons are made. Generally, the unhatched eggs from 1980 were in very poor condition when examined, probably because they had been frozen and inadvertently thawed at least twice before being injected with F.A.A. in 1982. Hence, the differentiation between fertile and infertile eggs from 1980 was difficult and probably not completely accurate. The unhatched eggs from seven 1982 clutches were preserved in F.A.A. approximately two days after the last hatchling transfer and were in good condition when they were examined. A total of 1,629 unhatched eggs from 1983 were preserved and examined. The majority, 1,403, were injected at Padre Island approximately two days after the last hatchling transfer; 829 with F.A.A. and 574 with 10% buffered formalin. Twenty-six were preserved with 10% buffered formalin at the NMFS laboratory in Galveston after a few days and 200 were preserved with F.A.A. in 1984 after being frozen for a year and inadvertently thawed a few times. When comparing the results of analyses conducted on 1980, 1982 and 1983 unhatched eggs one must also consider the difficulty in finding embryos within the 1983 eggs, which contained large amounts of yolk discoloration from fungal infection, and the general difficulty of finding embryos which ceased development early in incubation but remained unpreserved and deteriorated during the remainder of the clutch incubation period.

Generally, the results of the analyses conducted on the 1982 and

1984 unhatched eggs were similar. The percent of eggs which were fertile, infertile and which contained embryos were very similar for the two years. However, relatively fewer deformed embryos were found in 1984 than in 1982. The results from the 1983 unhatched eggs were quite different from the 1980, 1982 and 1984 eggs. The low relative percent of infertile eggs, low relative percent of eggs containing embryos and high relative percent of fertile eggs in which no embryos could be found indicated that most of the 1983 unhatched eggs ceased development very early in incubation.

RECOMMENDATIONS

1. Collection of Padre Island nests should be spread out over at least a four week period. The three day period in which the 1984 year class was collected resulted in unnecessarily hectic conditions for the Padre Island portion of the project.
2. In 1985 the CR-5 thermograph should be transported to Rancho Nuevo, so that a complete incubation record for each clutch can be recorded. Since the data for this year was inconclusive, three probes should be installed in each incubation box.

LITERATURE CITED

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Table 1. Summary of hatching success in each clutch, the number hatched, the percent hatched, the number lost during imprint and the number transferred to Galveston.

Clutch Number	Number Eggs In Clutch Padre Island	Number Eggs In Clutch Rancho Nuevo	Number Eggs Hatched	Percent Eggs Hatched	Total Number Turtles Lost During Imprint	Number to Galveston
512	123	123	102	82.9	2	29
513	122	122	119	97.5	0	101
514	102	102	92	90.2	0	50
515	96	96	93	96.9	0	61
765	72	72	51	70.8	0	41
766	123	124	104	84.6	2*	92*
767	87	91	66	75.9	1	65
768	95	96	88	92.6	0	88
769	114	113	106	93.0	0	104
770	89	89	72	80.9	0	72
771	112	112	107	95.5	0	107
772	112	119	106	94.6	1	101
773	103	108	85	82.5	0	85
774	106	109	102	96.2	2	100
775	90	90	82	91.1	1	78
776	115	119	110	95.7	0	102
797	106	106	101	95.3	0	100**
798	108	108	106	98.1	0	69
799	101	101	100	99.0	1	99
Total	1976	2000	1792	90.7	9	1544

* one of the two lost from clutch 766 mixed with clutch 797 and could not be differentiated

** contains one hatchling from clutch 766

Table 2. Locations of the probes which were planted within the clutches at Rancho Nuevo and denotation of those which were attached to the CR-5 for monitoring.

BOX-PROBE LOCATIONS			
Clutch Number	Bottom	Middle	Top
512	*	*	*
513	*	*	*
514	*	@	*
515	*	*	*
765	*	*	*
766	*	*	*
767	*	@	*
768	*	*	*
769	*	*	*
770	*	@	Ø
771	*	*	*
772	*	@	*
773	*	*	*
774	*	@	*
775	*	@	*
776	*	@	*
797	#	*	*
798	*	@	*
799	*	@	*

* Probes which were attached to the CR-5

@ Probes which were planted in Rancho Nuevo but not attached to CR-5

Probe attached to CR-5, but was not functional

Ø Probe attached to CR-5, but broke on incubation day 52

Table 3. Summary of incubation information showing clutch lay date, middle third of incubation period, hatch date and incubation period in days.

Box number	Lay date	Middle third of incubation period	Hatch date	Incubation period (days)
512	28 May 84	13 June-30 June 84	15 July 84	49
513	28 May 84	13 June-30 June 84	18 July 84	52
514	28 May 84	13 June-30 June 84	18 July 84	52
515	28 May 84	13 June-30 June 84	15 July 84	49
765	29 May 84	14 June-1 July 84	20 July 84	53
766	29 May 84	14 June-1 July 84	17 July 84	50
767	29 May 84	14 June-1 July 84	19 July 84	52
768	29 May 84	14 June-1 July 84	20 July 84	53
769	29 May 84	14 June-1 July 84	18 July 84	51
770	29 May 84	14 June-1 July 84	20 July 84	53
771	29 May 84	14 June-1 July 84	19 July 84	52
772	29 May 84	14 June-1 July 84	18 July 84	51
773	29 May 84	14 June-1 July 84	19 July 84	52
774	29 May 84	14 June-1 July 84	19 July 84	52
775	29 May 84	14 June-1 July 84	18 July 84	51
776	29 May 84	14 June-1 July 84	16 July 84	49
797	30 May 84	15 June-2 July 84	18 July 84	51
798	30 May 84	15 June-2 July 84	18 July 84	51
799	4 June 84	20 June-7 July 84	23 July 84	50

Table 4. Summary of hatching information showing date and time hatching began, date last egg hatched, duration of hatching and presence of late hatching individuals.

Clutch Number	Date of Hatching	Time of Hatching	Date Last Egg Hatched	Duration of Hatching	Late Hatching Individuals
512	15 July 84	0910	18 July 84	3 days	yes
513	18 July 84	0700	19 July 84	1 day	no
514	18 July 84	0700	19 July 84	1 day	yes
515	15 July 84	1205	18 July 84	3 days	yes
765	20 July 84	0710	20 July 84	>1 day	no
766	17 July 84	2010	19 July 84	2 days	yes
767	19 July 84	0530	20 July 84	1 day	no
768	20 July 84	0710	21 July 84	1 day	yes
769	18 July 84	1500	20 July 84	2 days	yes
770	20 July 84	1230	22 July 84	2 days	yes
771	19 July 84	0650	20 July 84	1 day	yes
772	18 July 84	1500	19 July 84	1 day	no
773	19 July 84	0350	20 July 84	1 day	no
774	19 July 84	0330	20 July 84	1 day	no
775	18 July 84	2145	18 July 84	>1 day	no
776	16 July 84	1100	18 July 84	2 days	yes
797	18 July 84	0700	22 July 84	4 days	yes
798	18 July 84	0700	18 July 84	>1 day	no
799	23 July 84	0710	25 July 84	2 days	yes

Table 5. Summary of pre-release hatchling information including date and time of hatchling transfer, number transferred, activity level in transfer box on release morning, number of clutches hatching and total time in transfer box before release.

Clutch Number	Date Transferred	Time Transferred	Number Transferred	Activity Level in Transfer Box on Release Morning	Number of Clutches in Shed Hatching	Total Time In Transfer Box Before Release
512	18 July 84	0830	* 99	semi-active	5	25 hours 40 min
	19 July 84	0300	* 3	semi-active		7 hours 10 min
513	19 July 84	0300	119	active	6	7 hours 25 min
514	19 July 84	0330	91	active	6	5 hours
	20 July 84	1300	1	active		45 hours
515	18 July 84	0830	* 92	active	5	25 hours 30 min
	19 July 84	0700	* 1	active		3 hours
765	20 July 84	0710	43	active	9	2 hours 15 min
766	19 July 84	1200	94	inactive	6	20 hours 30 min
	20 July 84	1100	# 2	inactive		46 hours 30 min
	21 July 84	1230	#& 8	inactive		21 hours
767	20 July 84	1125	66	inactive	9	46 hours 15 min
768	21 July 84	0930	* 86	active	9	23 hours 24 min
	22 July 84	0715	* 2	active		1 hour 39 min
769	20 July 84	1100	* 103	active	9	45 hours 30 min
	21 July 84	0910	* 3	active		24 hours 20 min
770	22 July 84	0730	1	inactive	9	25 hours
	22 July 84	0730	70	inactive		49 hours 15 min
	23 July 84	1000	1	inactive		94 hours 30 min

Table 5. continued

Clutch Number	Date Transferred	Time Transferred	Number Transferred	Activity Level in Transfer Box on Release Morning	Number of Clutches in Shed in Hatching	Total Time In Transfer Box Before Release
771	20 July 84	1125	* 103	active	9	46 hours 5 min
	21 July 84	0915	* 4	active		24 hours 15 min
772	20 July 84	1100	106	active	6	45 hours 50 min
773	21 July 84	0910	85	active	9	23 hours 10 min
774	21 July 84	0945	102	semi-active	9	47 hours
775	19 July 84	0900	82	active	5	5 hours 30 min
776	18 July 84	0930	* 109	semi-active	5	24 hours 15 min
	19 July 84	0300	* 1	semi-active		6 hours 45 min
797	19 July 84	1200	69	inactive	9	21 hours 30 min
	20 July 84	1115	# 25	semi-active		94 hours 30 min
	21 July 84	0915	# 6	semi-active		72 hours 15 min
	23 July 84	1030	# 1	semi-active		23 hours 15 min
798	19 July 84	0330	106	semi-active	5	7 hours 10 min
799	24 July 84	1150	# 76	active	1	45 hours 20 min
	26 July 84	0900	# 21	active		10 min
	27 July 84	0800	3	inactive		1 hour

* entire clutch released on same day
portions of this clutch released together
& one of these died and was never released

Table 6. Summary of hatchling release information showing date and time of release, release time lapse, activity level of turtles during release and disorientation exhibited.

Clutch Number	Date of Release	Time of Release	Release Time Lapse	Activity Level During Imprint	Disorientation Exhibited
512	19 July 84	1010	25 min	semi-active	no
513	19 July 84	1025	35 min	active	no
514	19 July 84	0830	85 min	active	no
	22 July 84	1000	30 min	active	no
515	19 July 84	1000	10 min	active	no
765	20 July 84	0925	25 min	active	no
766	20 July 84	0830	120 min	inactive	yes
	22 July 84	0930	30 min	inactive	yes
767	22 July 84	0915	45 min	semi-active	yes
768	22 July 84	0845	36 min	active	no
769	22 July 84	0830	25 min	active	yes
770	23 July 84	0830	75 min	inactive	yes
	24 July 84	0845	60 min	inactive	no
	27 July 84	0830	60 min	inactive	no
771	22 July 84	0930	30 min	active	no
772	22 July 84	0850	40 min	active	no
773	22 July 84	0820	40 min	active	no
774	23 July 84	0845	60 min	semi-active	yes
775	19 July 84	0900	60 min	active	no
776	19 July 84	0945	65 min	semi-active	no
797	20 July 84	0930	60 min	inactive	no
	24 July 84	0945	30 min	semi-active	no
798	19 July 84	1040	50 min	semi-active	no
799	26 July 84	0910	25 min	active	no
	27 July 84	0900	30 min	inactive	no

Table 7.

Summary of hatchling handling at Padre Island National Seashore, including clutches from which hatchlings were withheld for a growth study, date of imprinting, number imprinted on each date, date of grafting, dates on which hatchlings died, number which died on each date and date of shipment to Galveston.

Clutch number	Imprint date	Number imprinted	Graft date	Number grafted	Date and number died [†]									
					19/7	20/7	21/7	22/7	23/7	24/7	25/7	26/7	27/7	
512*	19/7/84	102	19/7	89	0	3	3	7	31	27 ^{ab}	c			
513*	19/7/84	119	19/20/7	109	0	0	0	0	0	18 ^{ab}	c			
514	19/7/84	91 ^d	20/7	81	0	0	0	1	7	34 ^b	c			
	22/7/84	1 ^d	22/7	1										
515*	19/7/84	93	20/7	83	0	0	0	2	7	23 ^b	c			
765	20/7/84	43	21/7	43	x	8 ^e	0	0	1	1 ^b				
766	20/7/84	94 ^d	21/7	92 ^g	x	0	0	0	1 ^e	9 ^b				
	22/7/84	9 ^d	22/7	9										
767*	22/7/84	66	—	0	x	x	x	0	0	0	f			
768*	22/7/84	88	—	0	x	x	x	0	0	0	f			
769	22/7/84	106 ^d	—	0	x	x	x	0	0	2	f			
770	23/7/84	1 ^d	—	0	x	x	x	x	x	0	f			
	24/7/84	70 ^d	—	0										
	27/7/84	1	—	0										
771*	22/7/84	107	—	0	x	x	x	0	0	0	f			
772*	22/7/84	106	—	0	x	x	x	0	0	4	f			
773	19/7/84	85	—	0	0	0	0	0	0	0	f			
774*	23/7/84	102	—	0	x	x	x	x	0	0	f			
775*	19/7/84	82	21/7	71	0	0	0	0	0	3 ^f				
776*	19/7/84	110	22/7	100	0	0	0	0	0	8 ^b	c			
797	20/7/84	69	22/7	70 ^g	x	0	0	0	0	2	f			
	24/7/84	32	—	0	x	x	x	x	x	0	f			
798*	19/7/84	106 ^d	22/7	96	0	0	1	0	3	33	f			
799	26/7/84	97 ^d	—	0	x	x	x	x	x	x	x	0	f	
	27/7/84	3 ^d	—	0										

[†] all individuals which died were grafted unless otherwise noted

x dates before which hatchlings were imprinted

— hatchlings were not grafted

* 10 animals from this clutch were held in growth study chambers

a one of these individuals died in a growth study chamber and hence was not grafted

b only grafted individuals from this clutch were shipped to Galveston at this time

c only ungrafted individuals from this clutch (from the growth study) were shipped at this time

d individuals from this clutch were held together at Padre Island after imprinting and/or grafting

e these individuals died before imprinting

f entire clutch was shipped to Galveston at this time

g one of the two hatchlings lost from clutch 766 during imprint mixed with clutch 797 and could not be differentiated

Table 8. Summary of the total number of hatchlings which died in each clutch at Padre Island National Seashore, the date of death and the number which died on each date.

DEAD HATCHLINGS			
Clutch number	Total number died	Date died	Number died on each date
512	71	20 July 84	3
		21 July 84	3
		22 July 84	7
		23 July 84	31
		24 July 84	27
513	18	24 July 84	18
514	42	22 July 84	1
		23 July 84	7
		24 July 84	34
515	32	22 July 84	2
		23 July 84	7
		24 July 84	23
765	10	20 July 84	8
		23 July 84	1
		24 July 84	1
766	10	23 July 84	1
		24 July 84	9
767	0	-	-
768	0	-	-
769	2	24 July 84	2
770	0	-	-
771	0	-	-
772	4	24 July 84	4
773	0	-	-
774	0	-	-
775	3	24 July 84	3
776	8	24 July 84	8
797	2	24 July 84	2
798	37	21 July 84	1
		23 July 84	3
		24 July 84	33
799	0	-	-
TOTAL	239		

Table 9. Summary of the disposition of hatchlings which died at Padre Island National Seashore.

Clutch number	Total number died	Number autopsied at Texas A&M	Number necropsied at Miami	Number dissected for kidneys and gonads
512	71	2	6	63
513	18	2	1	15
514	42	0	0	42
515	32	0	1	31
765	10	0	0	10
766	10	2	0	8
767	0	0	0	0
768	0	0	0	0
769	2	0	0	2
770	0	0	0	0
771	0	0	0	0
772	4	2	0	2
773	0	0	0	0
774	0	0	0	0
775	3	0	3	0
776	8	0	0	0
797	2	1	0	1
798	37	2	0	35
799	0	0	0	0
TOTAL	239	11	11	209

Table 10. Summary of the mean and standard deviations of carapace length and weight for all hatchlings.

Clutch number	Number of turtles	<u>CARAPACE LENGTH (mm)</u>		<u>WEIGHT (gram)</u>	
		Mean	Standard deviation	Mean	Standard deviation
512	100	41.14	1.34	14.08	0.90
513	119	43.42	0.72	15.72	0.51
514	92	41.84	3.10	16.02	0.77
515	93	42.95	0.84	15.68	0.71
765	43	44.39	1.48	16.70	1.18
766	101	43.83	0.91	16.49	0.66
767	65	43.62	0.76	15.50	0.54
768	88	44.57	0.88	17.87	0.74
769	106	42.57	0.71	15.18	0.61
770	72	44.20	1.10	15.94	1.29
771	107	44.25	0.93	17.93	0.70
772	105	44.35	0.85	16.60	0.58
773	85	45.71	0.68	18.58	0.41
774	100	44.27	0.90	16.40	0.58
775	81	44.11	0.96	17.27	0.71
776	110	43.27	0.75	16.96	0.59
797	102	43.01	2.98	16.62	0.76
798	106	43.23	1.14	15.71	0.73
799	99	42.88	0.86	16.18	0.81
TOTAL	1774	43.50	1.67	16.37	1.26

Table 11. Descriptive statistics for 1980, 1981, 1982, 1983 and 1984 Kemp's Ridley hatchlings.

Year	Curved Carapace Length (mm)			Weight (grams)	
	n	$\bar{x}$	s	$\bar{x}$	s
1980	317	43.62	2.04	-	-
1981	230	42.14	1.85	-	-
1982	199	44.71	1.66	-	-
1983*	233	41.59	1.71	15.31	1.16
1984*	1774	43.50	1.67	16.37	1.26

*1983 and 1984 straight line carapace length

Table 12. Summary of the embryological analysis of the 1984 Padre Island National Seashore unhatched Kemp's Ridley eggs.

Clutch number	Total number eggs in clutch	Total number unhatched eggs	Total number rotten eggs	Total number infertile eggs	Total number eggs fertile but without embryos	Total number eggs with embryos	Total number rotten embryos	Total number staged embryos	Total number deformed embryos
512	123	21	0	2	0	19	1	18	2
513	122	3	0	3	0	0	0	0	0
514	102	10	0	5	2	3	0	3	0
515	96	3	0	0	1	2	0	2	0
765	72	21	3	9	2	7	2	7	2
766	123	19	1	5	4	9	2	7	0
767	87	21	3	7	2	9	0	9	0
768	95	7	2	0	3	2	0	2	0
769	114	8	1	0	4	3	0	3	0
770	89	17	0	4	8	5	0	5	1
771	112	5	0	1	2	2	0	2	0
772	112	6	1	0	4	1	0	1	0
773	103	18	0	3	11	4	0	4	2
774	106	4	0	0	0	4	0	4	2
775	90	8	0	0	6	2	0	2	0
776	115	5	0	0	4	1	0	1	0
797	106	5	0	0	4	1	0	1	1
798	108	2	0	0	2	0	0	0	0
799	101	1	0	0	0	1	0	1	1
TOTAL	1976	184	11	39	59	75	3	72	11

Table 13. Embryological stages of development of embryos found within 1984 Padre Island National Seashore unhatched Kemp's Ridley eggs.

Approximate days of development	3	4	5	5	6	7	8	9	10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26	27	28	29	30	33	36	40	45	50
Embryological stage of development	3	4	5	6	7	8	9	10	10	11	12	12	13	14	15	16	17	18	19	20	21	22	23	24	26	27	28	29	30	33	36	40	45 <td>50</td>	50
Clutch #																																		
512																																		
513																																		
514																																		
515																																		
765																																		
766																																		
767	1																																	
768																																		
769																																		
770																																		
771																																		
772																																		
773																																		
774																																		
775																																		
776																																		
797																																		
798																																		
799																																		
TOTAL	1	0	0	0	0	0	0	1	10	3	2	1	1	1	5	0	1	2	0	2	1	0	0	0	2	2	3	5	7	9	13	1		

Table 14.

Summary of the numbers of deformed embryos found within the 1984 Padre Island National Seashore unhatched Kemp's Ridley eggs, their clutch numbers, descriptions of deformities and embryological stages of development.

Clutch number	Total number deformed	Description of deformity	Embryological stage of development
512	2	#1-saddleback	27-28
		#2-left side of carapace indented	28-29
766	2	#1-non-occluding jaws, no eyes, large diencephalon	30
		#2-long snout, no eyes, large diencephalon	30
770	1	lower jaw very short, large and soft diencephalon	28
773	2	#1-carapace very narrow	30-31
		#2-non-occluding jaws, no eyes, large diencephalon	29-30
774	2	#1-no flippers, large bump at anterior of carapace, plastron not complete	27
		#2-almost pure albino (tips of flippers brown), no eyes, no mouth, point on head in area of diencephalon	29-30
797	1	large notch in left front flipper	29-30
799	1	very large head	10
TOTAL	11		

Table 15. Summary of the embryological analysis of 1980, 1982, 1983 and 1984 Padre Island National Seashore unhatched Kemp's ridley eggs.

Year class	#(%) of eggs unhatched	#(%) of unhatched eggs examined	#(%) of unhatched eggs examined rotten	#(%) of unhatched eggs examined infertile	#(%) of unhatched eggs examined fertile but without embryos	#(%) of unhatched eggs examined containing rotten embryos	#(%) of embryos staged	#(%) of staged embryos deformed
1980	474(15.9)	450(94.9)	14(3.1)	226(50.2)	37(8.2)	173(38.4)	115(66.5)	16(13.9)
1982*	105(16.8)	105(100.0)	5(4.8)	28(26.7)	25(23.8)	47(44.8)	44(93.6)	12(27.3)
1983	1764(87.9)	1629(92.3)	45(2.8)	252(15.5)	1102(67.6)	230(14.1)	213(92.6)	6(2.8)
1984	184(9.3)	184(100.0)	11(6.0)	39(21.2)	59(32.1)	75(40.8)	72(96.0)	11(15.3)
TOTAL	2527(33.3)	2368(93.7)	75(3.2)	545(23.0)	1223(51.6)	525(22.2)	444(84.6)	45(10.1)

* based upon the analysis of all unhatched eggs from 7 of a total of 20 clutches recieved at Padre Island National Seashore in 1982

Table 16. Summary of the embryological stages of development of embryos found within 1980, 1982, 1983 and 1984 Padre Island National Seashore unhatched Kemp's Ridley eggs, showing the numbers and percentages of embryos in each developmental stage within each year class and overall.

Embryological stage	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	27	28	28	29	29	30	30	Total		
Year class																																			
1980	0						1		1	2	4	5	1	1		2	3	8	3	4	6				1	2	6	4	12	7	27	15	115		
							0.9		0.9	1.7	3.5	4.3	0.9	0.9		1.7	2.6	7.0	2.6	3.5	5.2				0.9	1.7	5.2	3.5	10.4	6.1	23.5	13.0	100.0		
1982	0						1		5	2	1	3	4	1		1								1									44		
							2.3		11.3	4.5	2.3	6.8	9.1	2.3	2.3								2.3										100.0		
1983	0						3	3	2	10	12	14	8	4	6	7	5	7	3	4	1	1			1	6	6	11	26	35	38	213			
							1.4	1.4	0.9	4.7	5.6	6.6	3.8	1.9	2.8	3.3	2.3	3.3	1.4	1.9	0.5	0.5			0.5	2.8	2.8	5.2	12.2	16.4	17.8	100.0			
1984	0								1	10	3	2	1	1	5		1	2		2	1					2	2	3	5	7	9	13	1	72	
									1.4	13.9	4.1	2.8	1.4	1.4	6.9		1.4	2.8		2.8	1.4					2.8	2.8	4.1	6.9	9.7	12.5	18.1	1.4	100.0	
TOTAL	0	1	0.2	4	4	3	0.9	0.7	5.9	4.3	4.7	3.8	2.2	2.7	1.8	1.8	2.9	2.5	2.0	1.4	1.6				1	2	10	15	19	44	56	82	35	1	444
																																		0.2	100.0

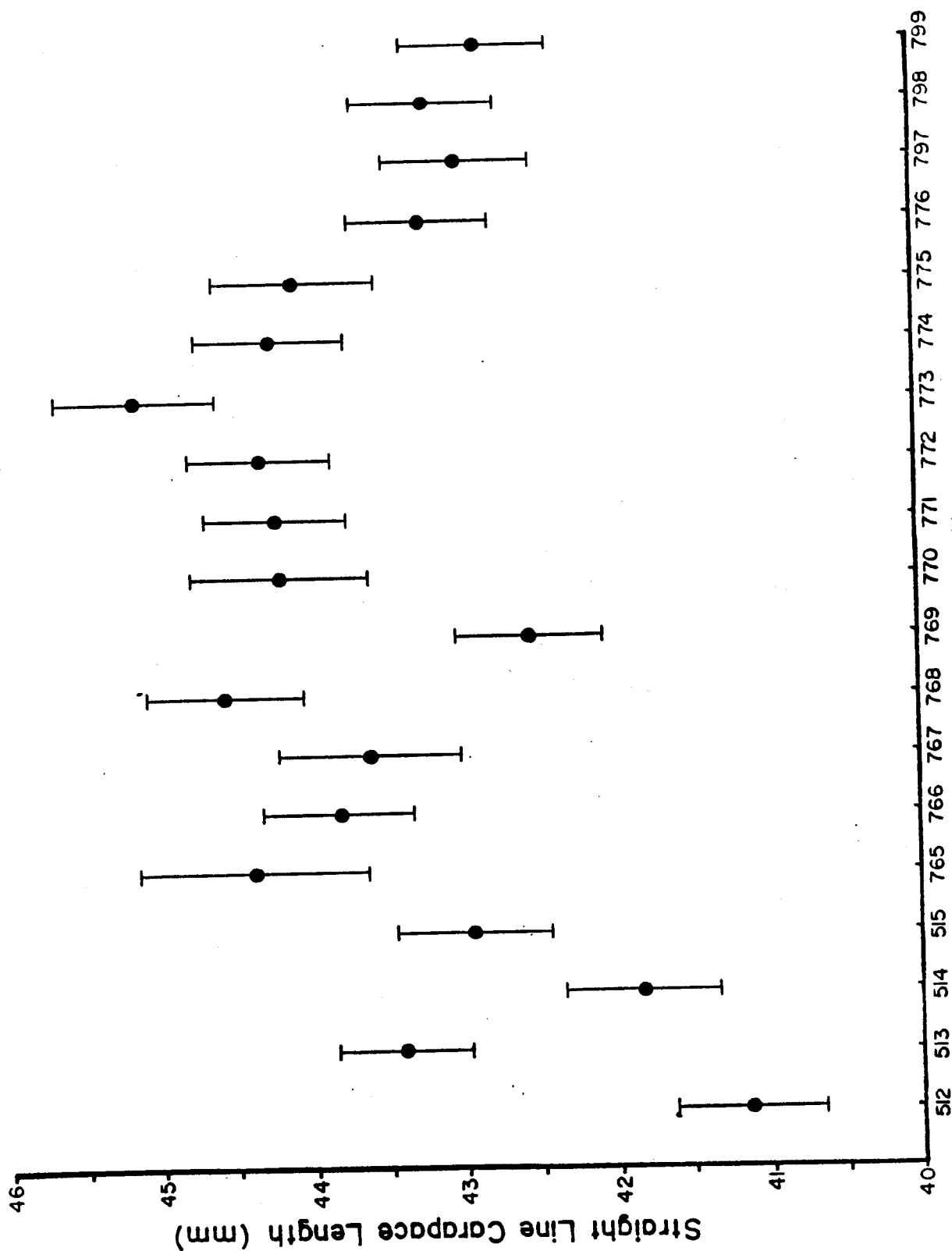


Figure 1. 95% comparison intervals by the GT 2-method for the mean straight line carapace lengths of the 1984 Padre Island National Seashore clutches of Kemp's Ridley sea turtles. Means whose intervals do not overlap are significantly different.

Appendix I. Graphs of incubation and ambient temperatures for each clutch of 1984 Kemp's Ridley eggs while at Padre Island National Seashore.

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

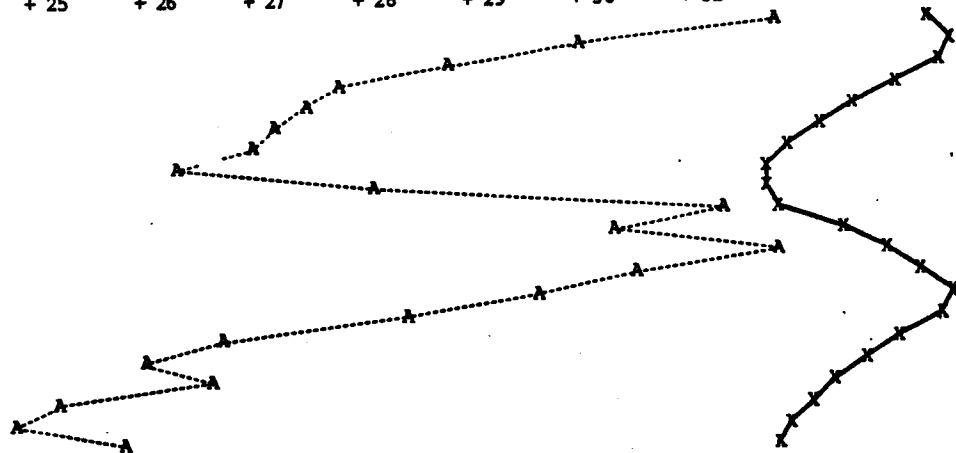
BOX # 512

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINING INCUBATION DAY 47
ENDING INCUBATION DAY 49

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800

+ 25 + 26 + 27 + 28 + 29 + 30 + 31 + 32 + 33 + 34 + 35 + 36



HATCHING BEGINS

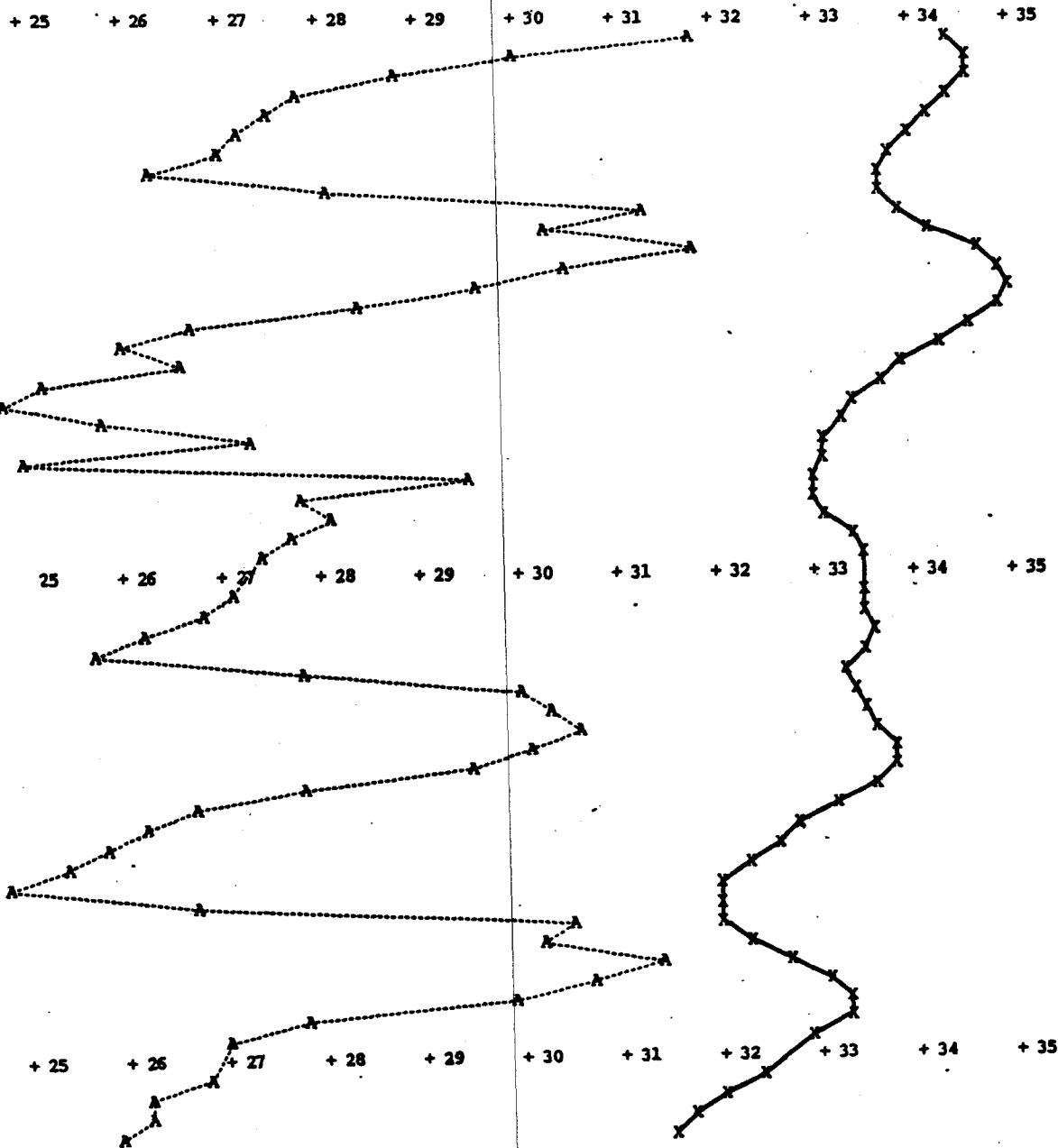
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 513

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 47
ENDING INCUBATION DAY 52

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200
198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200
200 0000
200 0200
200 0400
200 0600



HATCHING BEGINS

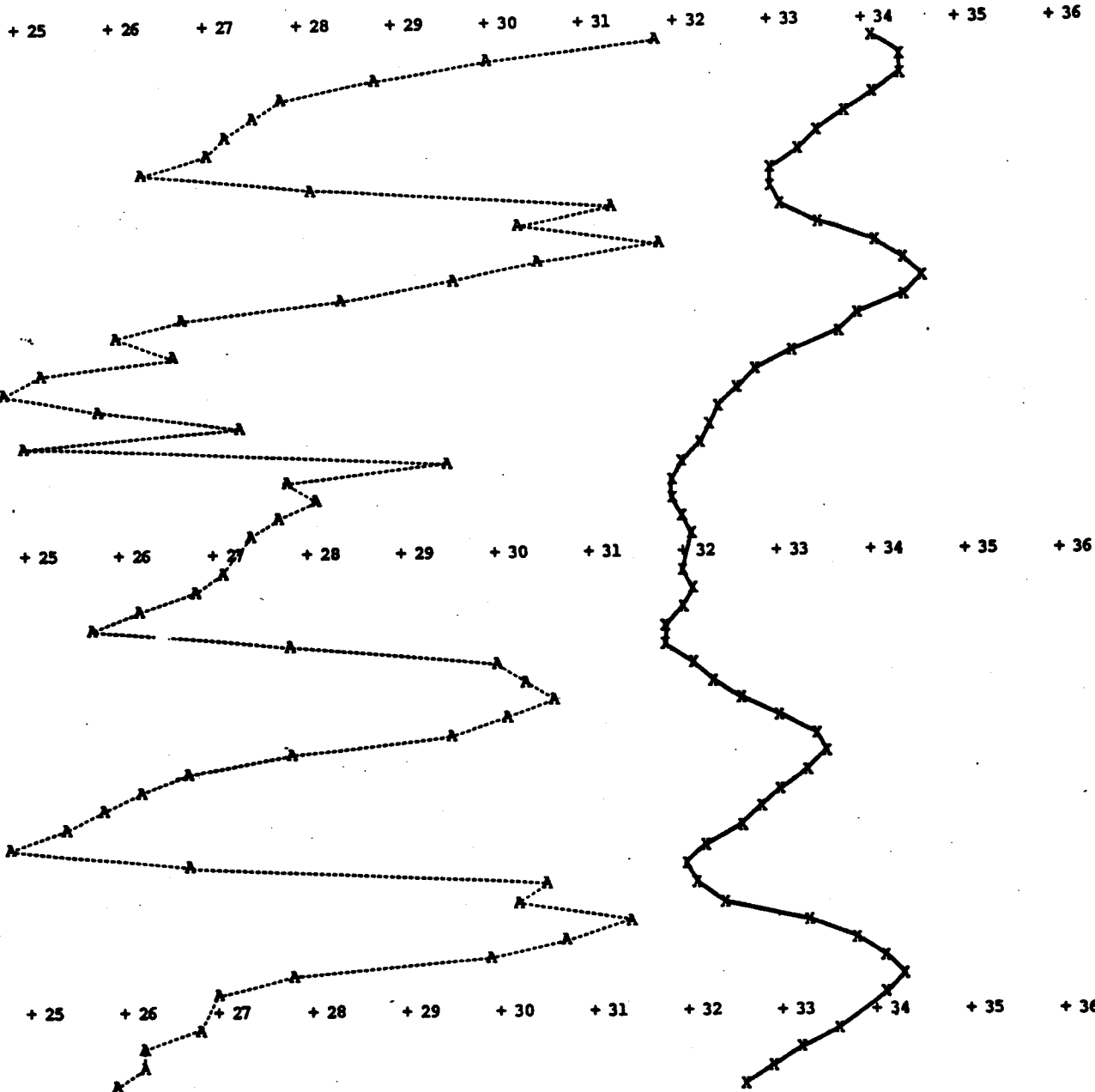
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 514

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINING INCUBATION DAY 47
ENDING INCUBATION DAY 52

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200
198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200
200 0000
200 0200
200 0400
200 0600



HATCHING BEGINS

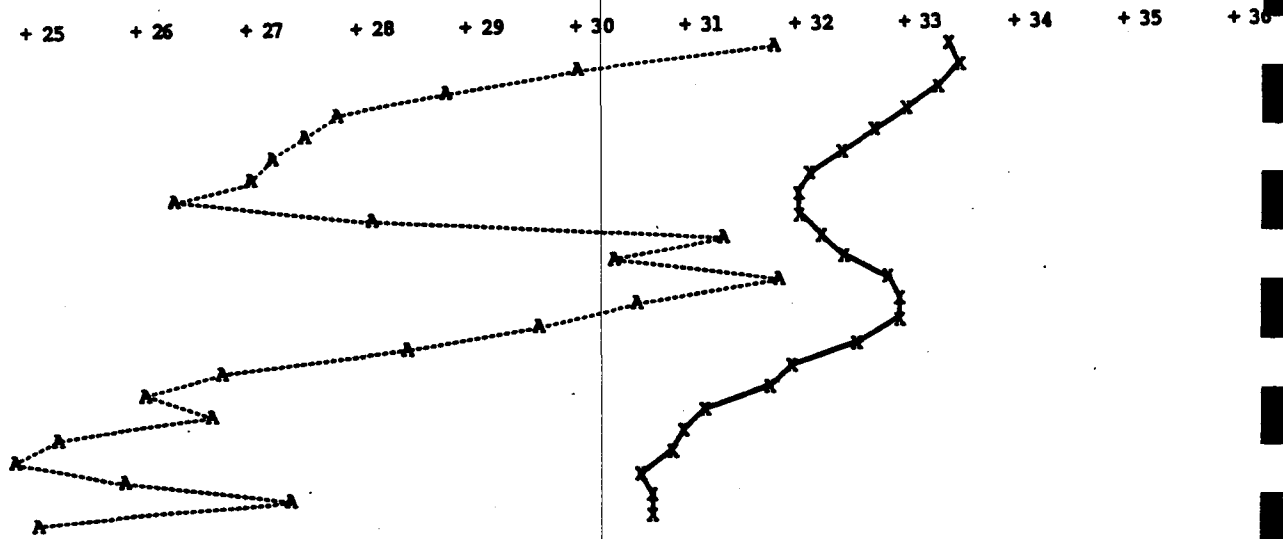
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 515

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINING INCUBATION DAY 47
ENDING INCUBATION DAY 49

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200



HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 765

A = AMBIENT TEMPERATURE, CELSIUS
 X = INCUBATION TEMPERATURE, CELSIUS
 JD = JULIAN DAY
 TIME = TIME IN HUNDRED HOURS
 BEGINNING INCUBATION DAY 46
 ENDING INCUBATION DAY 53

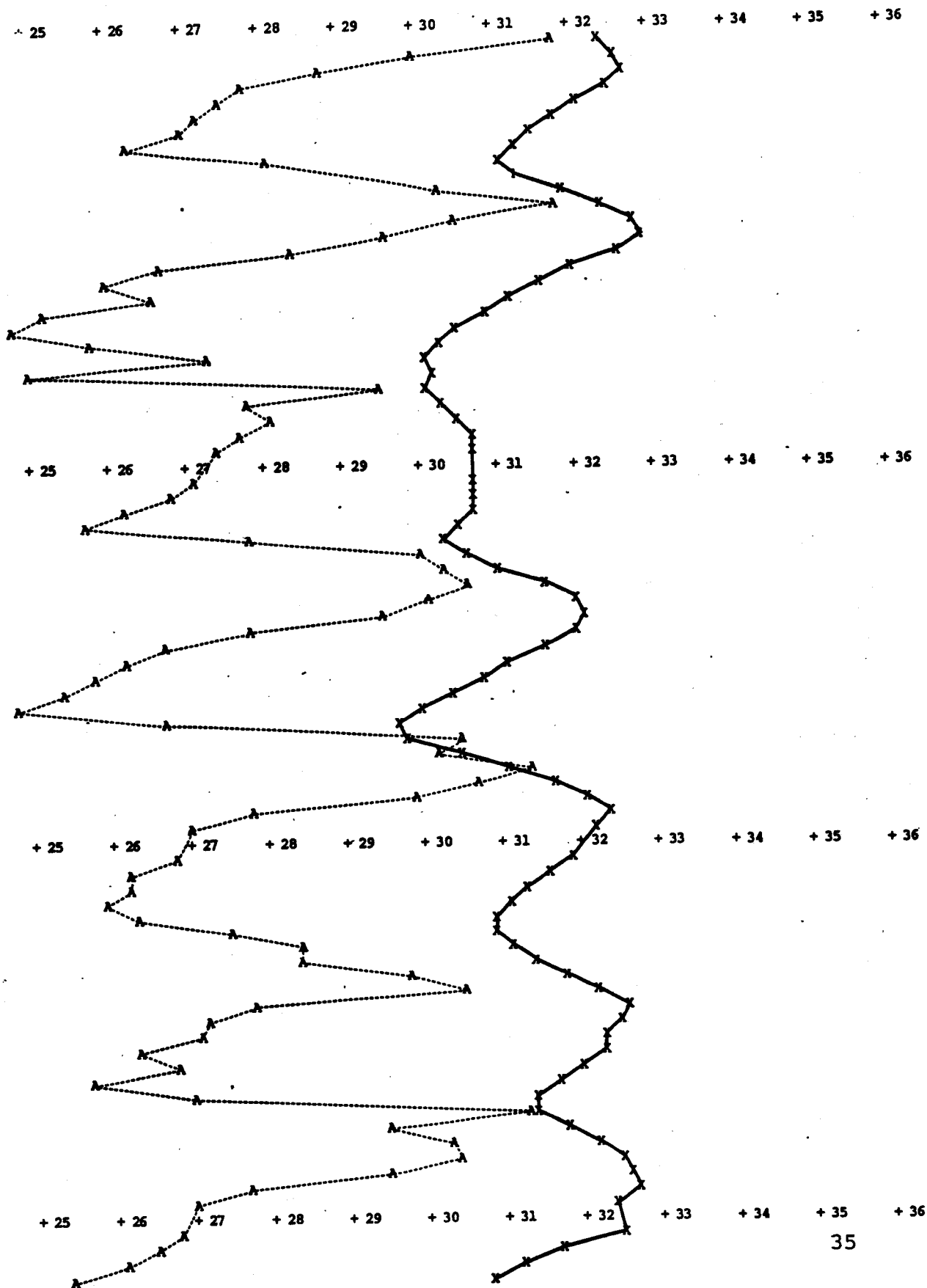
JD TIME

195 1600
 195 1800
 195 2000
 195 2200
 196 0000
 196 0200
 196 0400
 196 0600
 196 0800
 196 1000
 196 1200
 196 1400
 196 1600
 196 1800
 196 2000
 196 2200
 197 0000
 197 0200
 197 0400
 197 0600
 197 0800
 197 1000
 197 1200
 197 1400
 197 1600
 197 1800
 197 2000
 197 2200

198 0000
 198 0200
 198 0400
 198 0600
 198 0800
 198 1000
 198 1200
 198 1400
 198 1600
 198 1800
 198 2000
 198 2200
 199 0000
 199 0200
 199 0400
 199 0600
 199 0800
 199 1000
 199 1200
 199 1400
 199 1600
 199 1800
 199 2000
 199 2200

200 0000
 200 0200
 200 0400
 200 0600
 200 0800
 200 1000
 200 1200
 200 1400
 200 1600
 200 1800
 200 2000
 200 2200
 201 0000
 201 0200
 201 0400
 201 0600
 201 0800
 201 1000
 201 1200
 201 1400
 201 1600
 201 1800
 201 2000
 201 2200

202 0000
 202 0200
 202 0400
 202 0600



HATCHING BEGINS

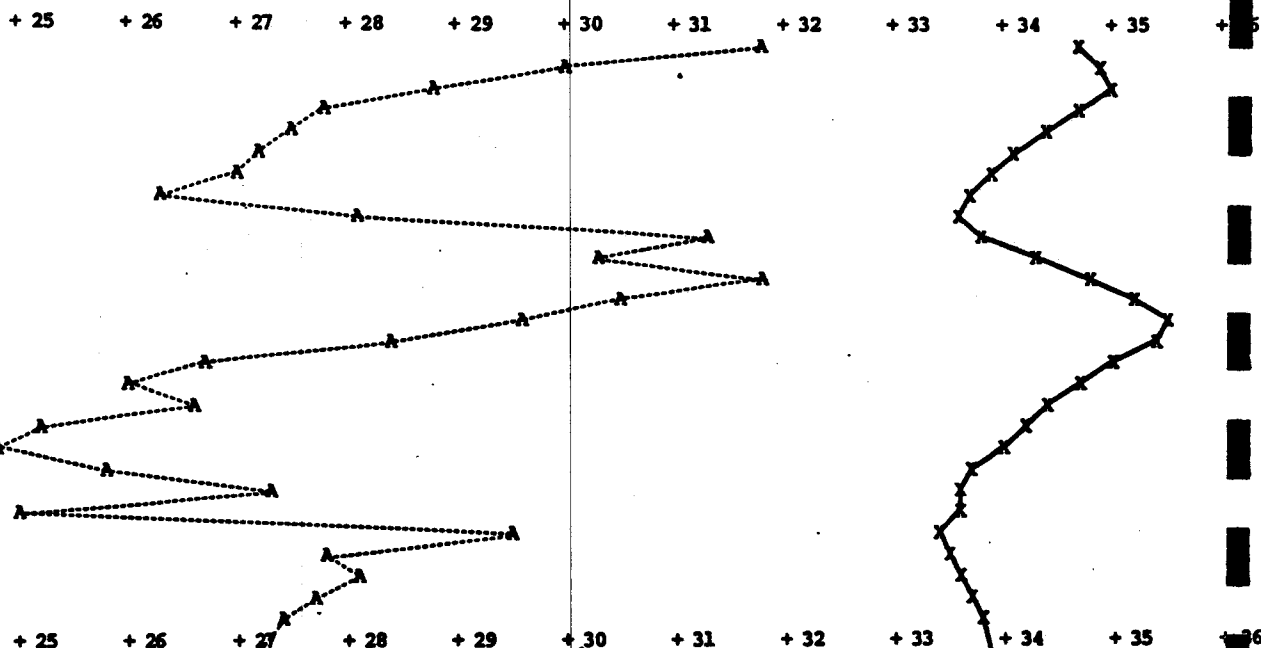
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 766

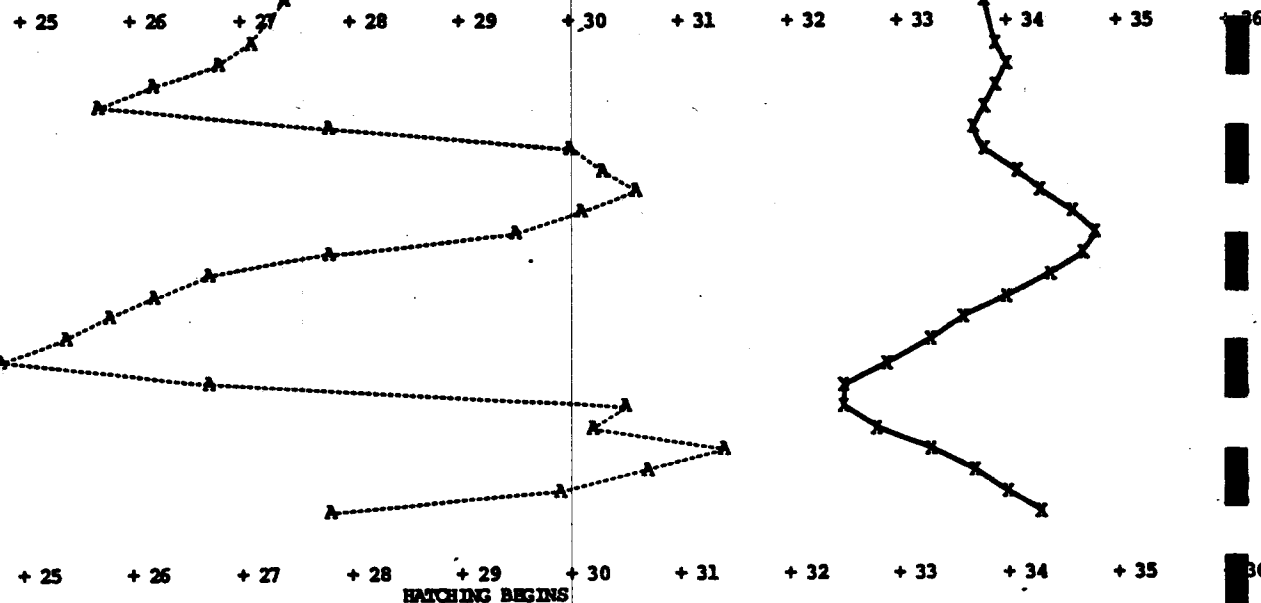
A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 46
ENDING INCUBATION DAY 50

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200



198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000



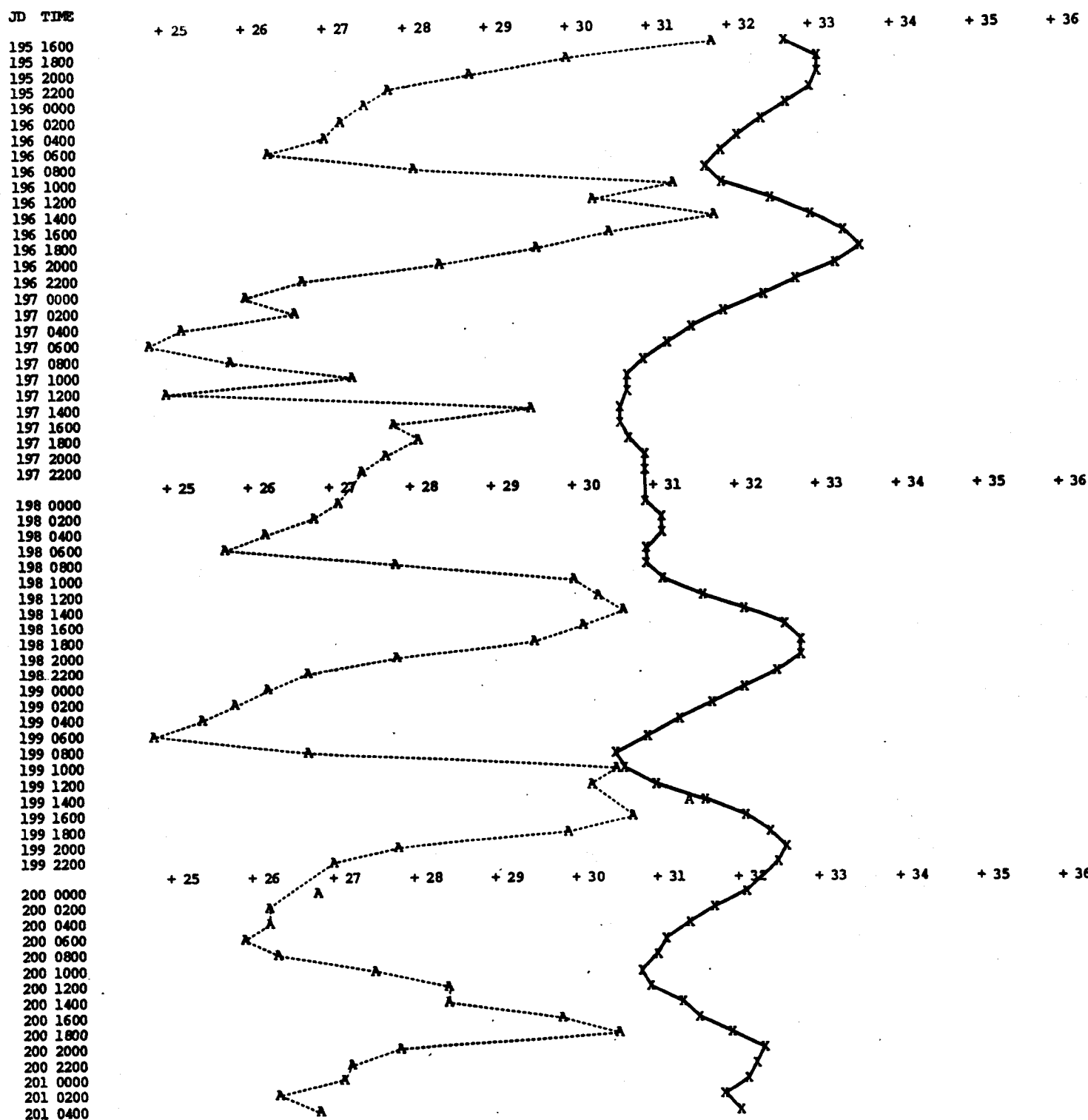
HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 767

A = AMBIENT TEMPERATURE, CELSIUS
 X = INCUBATION TEMPERATURE, CELSIUS
 JD = JULIAN DAY
 TIME = TIME IN HUNDRED HOURS
 BEGINNING INCUBATION DAY 46
 ENDING INCUBATION DAY 52

JD TIME



HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 768

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINING INCUBATION DAY 46
ENDING INCUBATION DAY 53

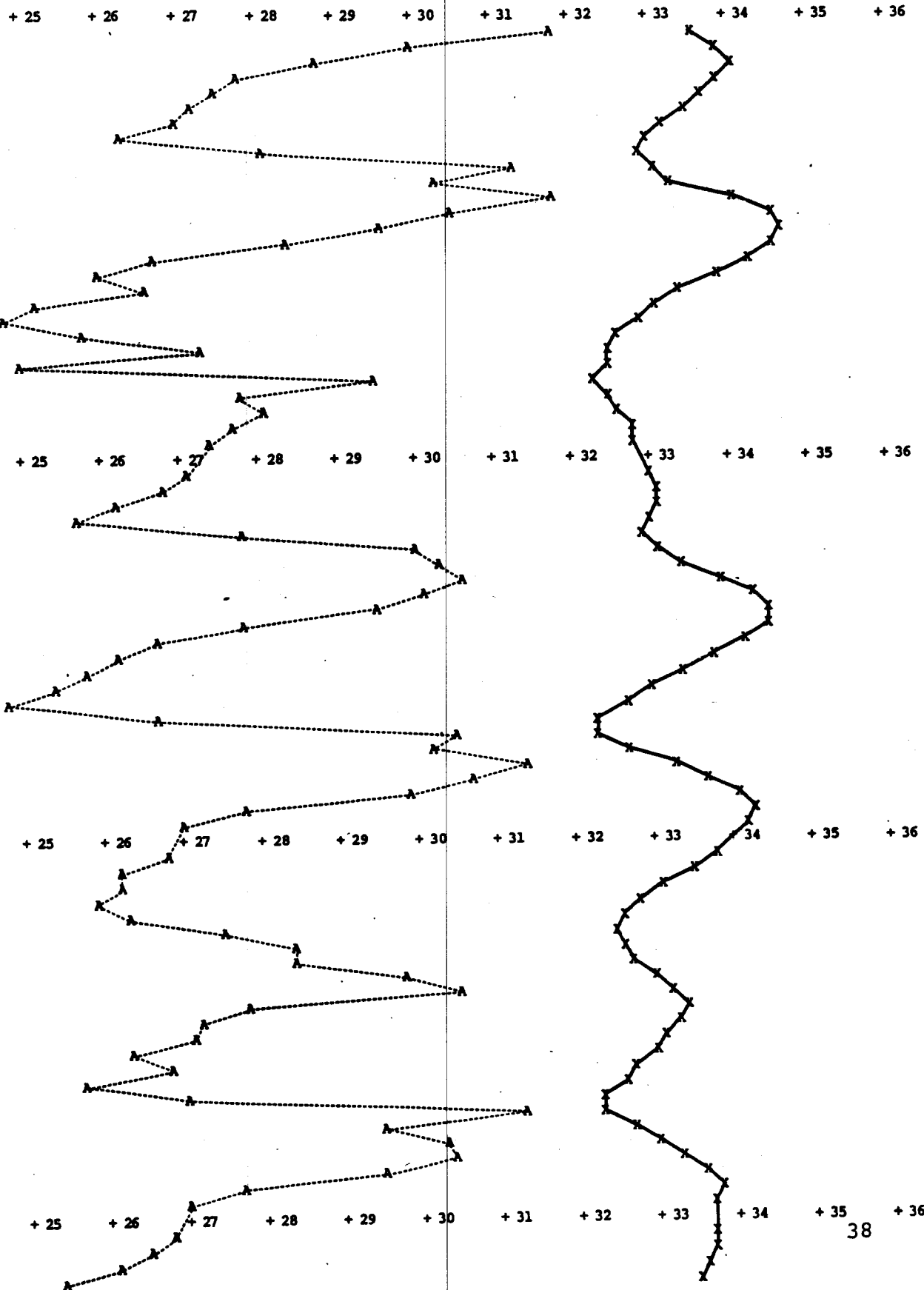
JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200

198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
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198 2000
198 2200
199 0000
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199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200

200 0000
200 0200
200 0400
200 0600
200 0800
200 1000
200 1200
200 1400
200 1600
200 1800
200 2000
200 2200
201 0000
201 0200
201 0400
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201 1000
201 1200
201 1400
201 1600
201 1800
201 2000
201 2200

202 0000
202 0200
202 0400
202 0600



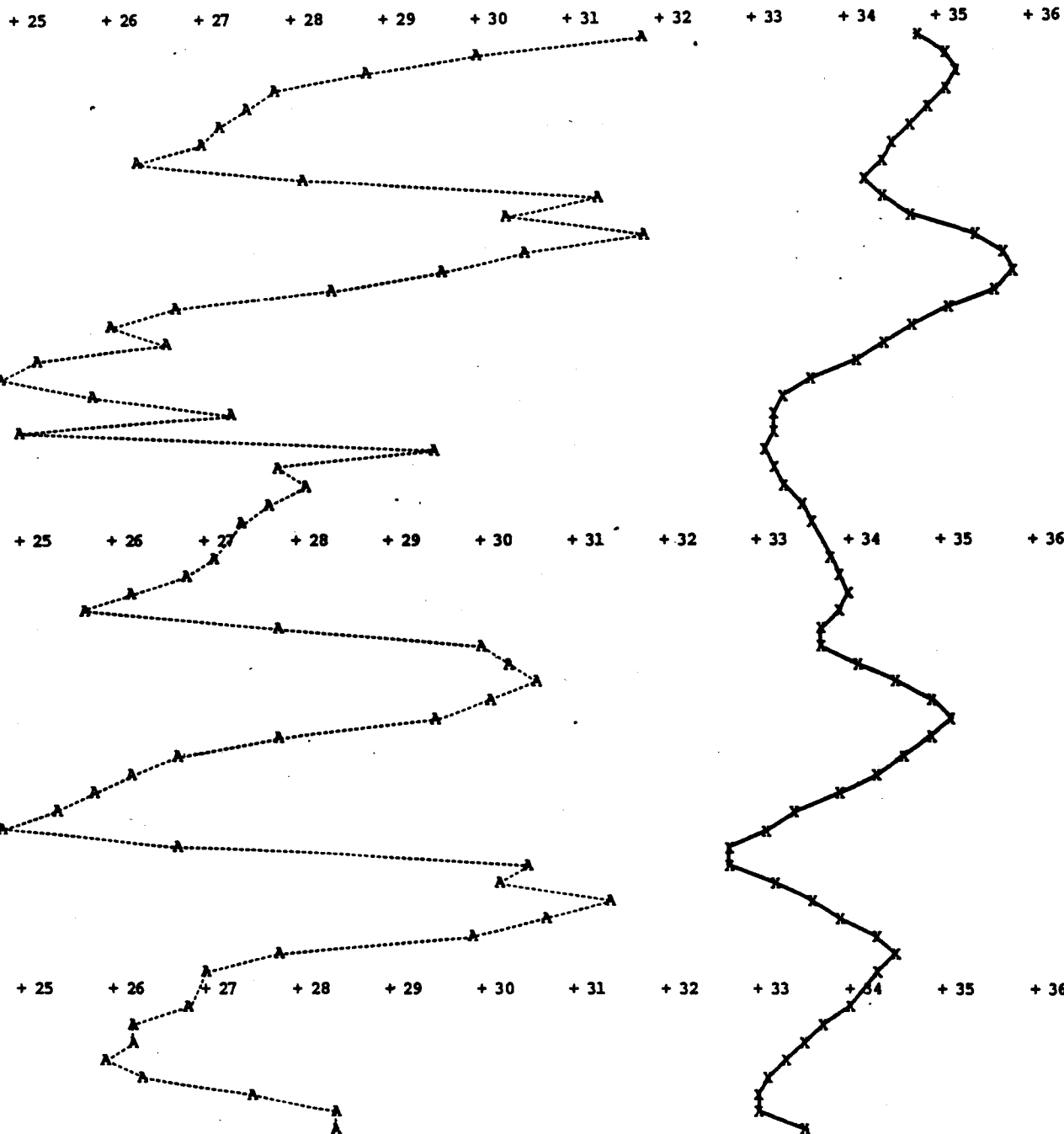
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 769

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINING INCUBATION DAY 46
ENDING INCUBATION DAY 51

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
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197 2200
198 0000
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198 0400
198 0600
198 0800
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198 1200
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198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200
200 0000
200 0200
200 0400
200 0600
200 1000
200 1000
200 1200
200 1400



HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

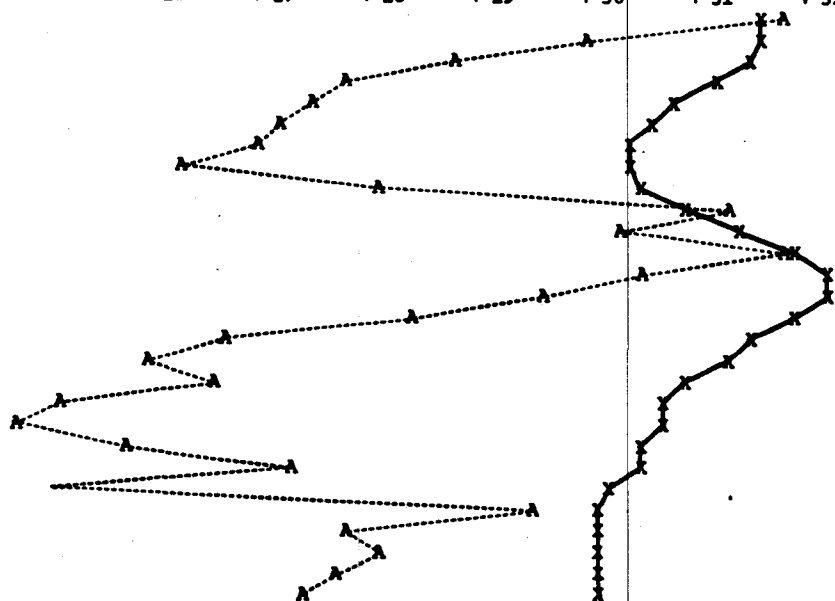
BOX # 770

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 46
ENDING INCUBATION DAY 53

JD TIME

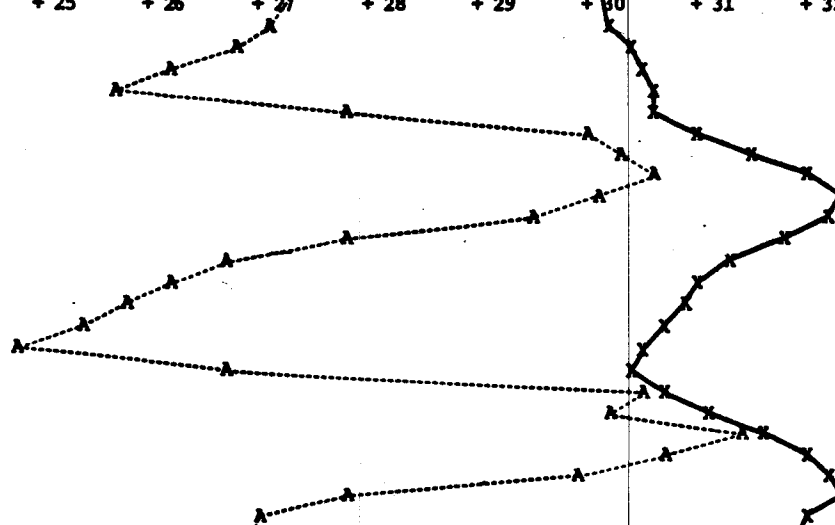
195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200

+ 25 + 26 + 27 + 28 + 29 + 30 + 31 + 32 + 33 + 34 + 35 + 36



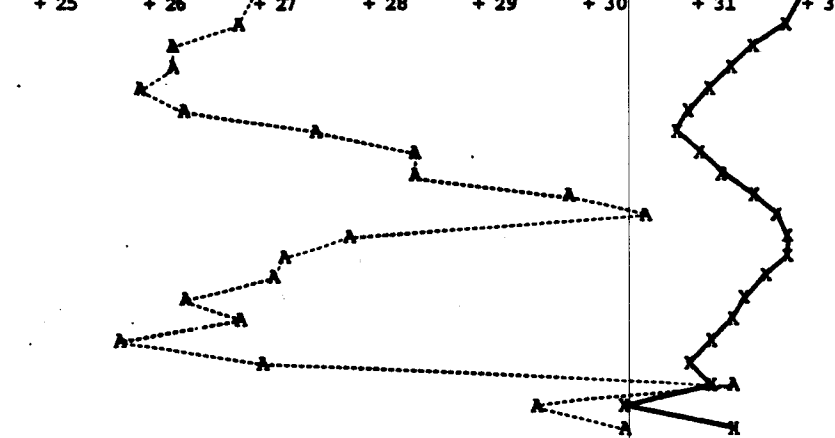
+ 25 + 26 + 27 + 28 + 29 + 30 + 31 + 32 + 33 + 34 + 35 + 36

198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200



+ 25 + 26 + 27 + 28 + 29 + 30 + 31 + 32 + 33 + 34 + 35 + 36

200 0000
200 0200
200 0400
200 0600
200 0800
200 1000
200 1200
200 1400
200 1600
200 1800
200 2000
200 2200
201 0000
201 0200
201 0400
201 0600
201 0800
201 1000
201 1200
201 1400

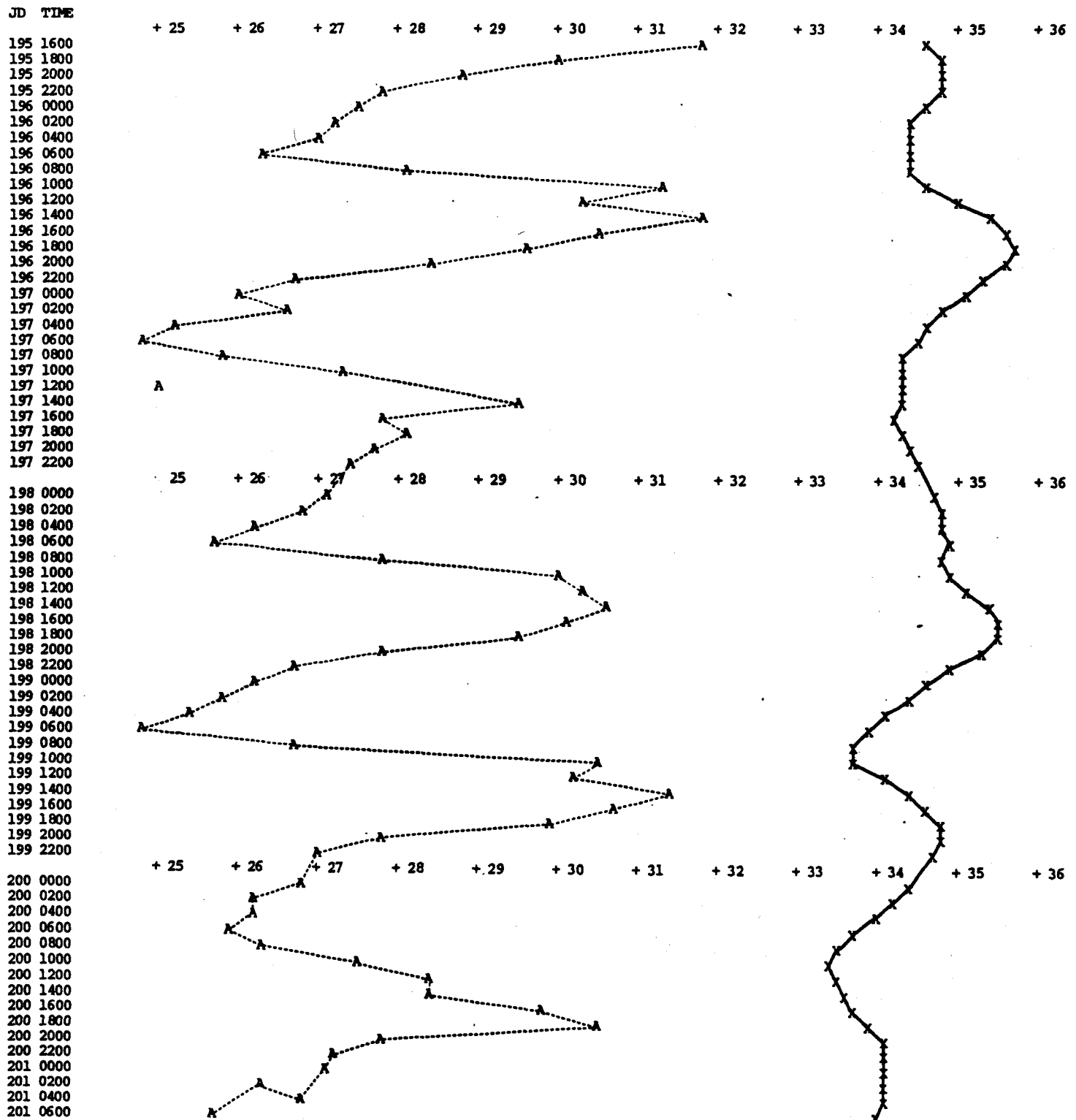


HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 771

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINING INCUBATION DAY 46
ENDING INCUBATION DAY 52



HATCHING BEGINS

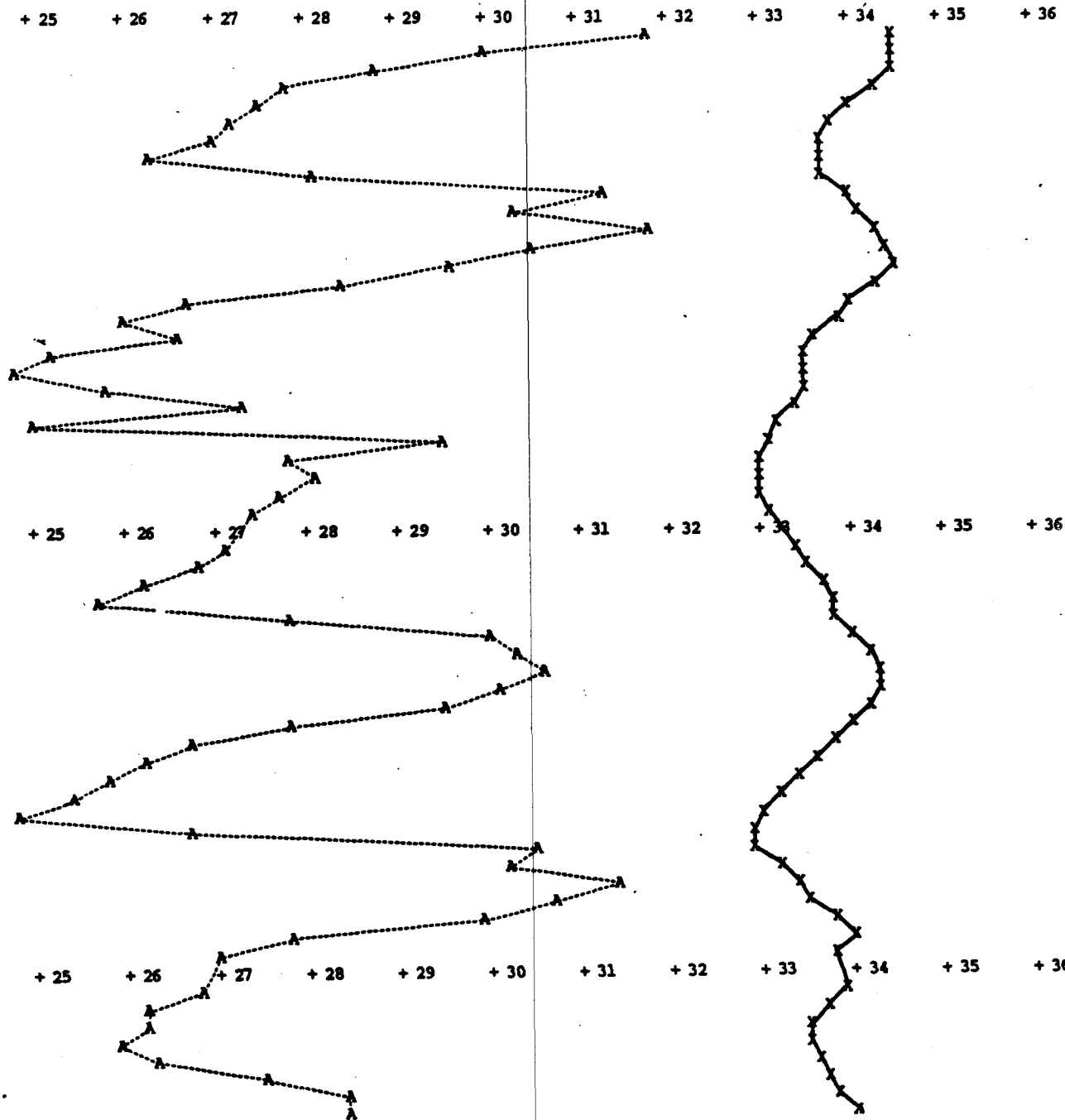
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 772

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 46
ENDING INCUBATION DAY 51

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200
198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200
200 0000
200 0200
200 0400
200 0600
200 0800
200 1000
200 1200
200 1400

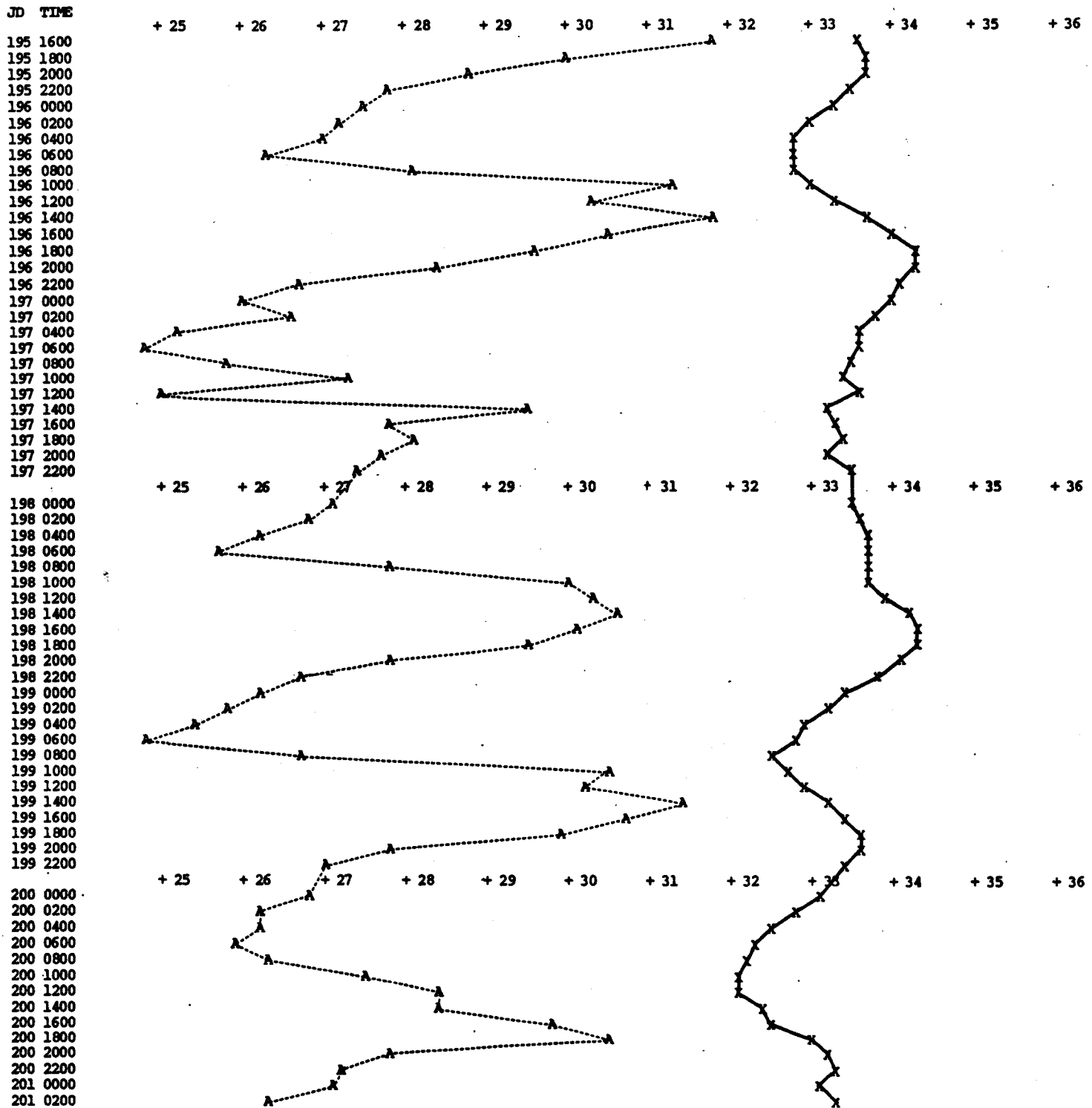


HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 773

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 46
ENDING INCUBATION DAY 52



HATCHING BEGINS

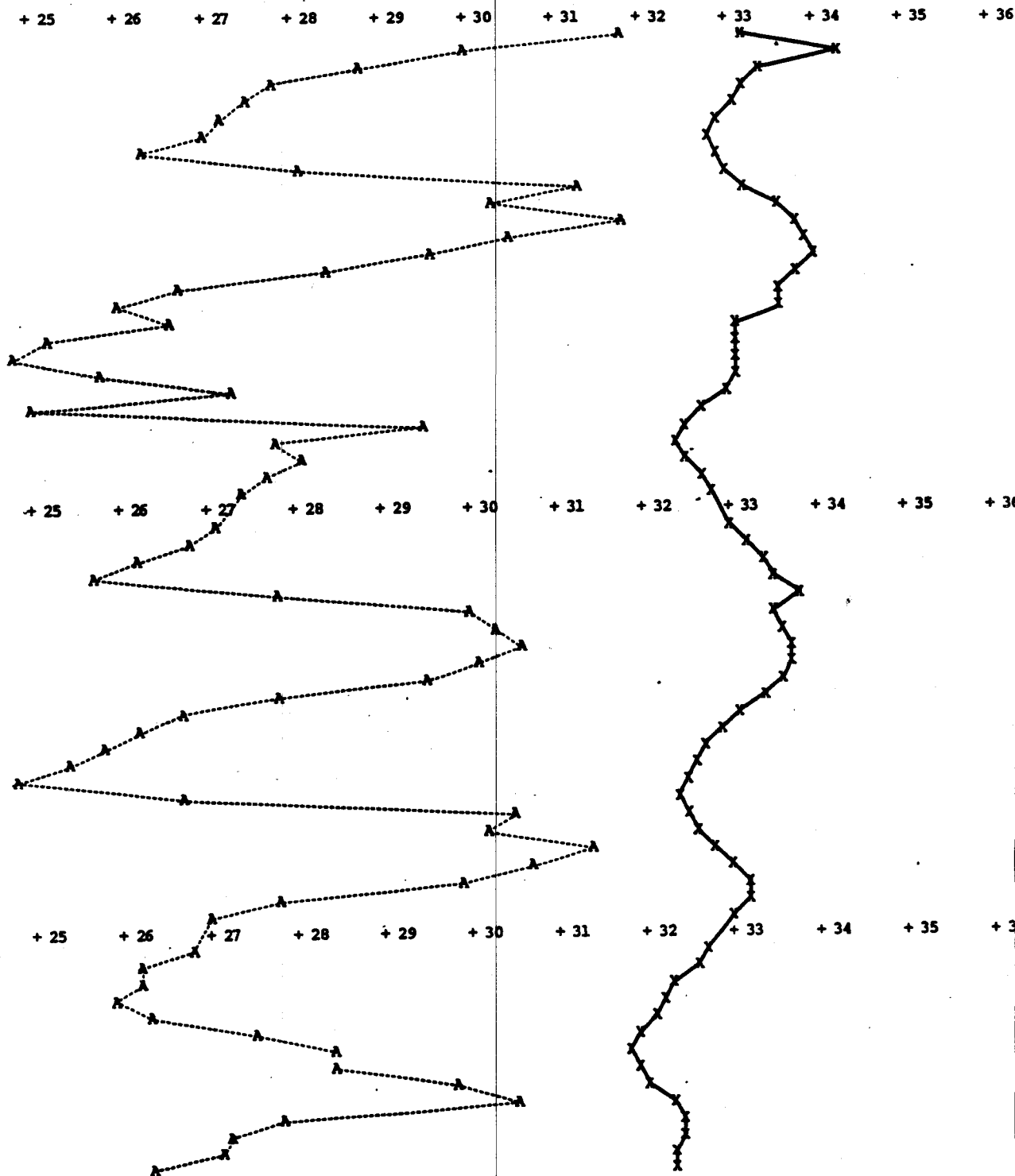
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 774

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 46
ENDING INCUBATION DAY 52

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200
198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200
200 0000
200 0200
200 0400
200 0600
200 0800
200 1000
200 1200
200 1400
200 1600
200 1800
200 2000
200 2200
201 0000
201 0200



HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 775

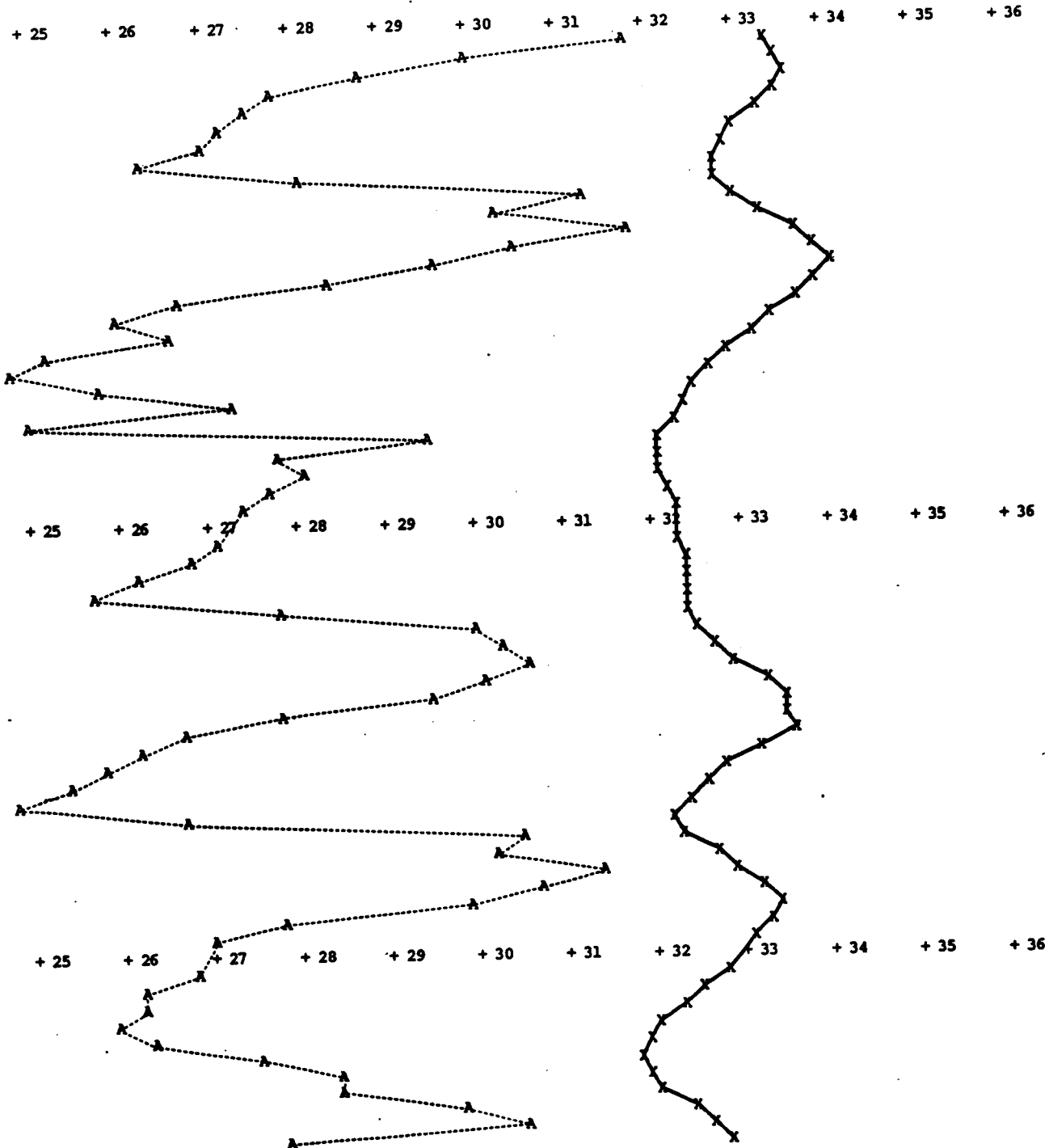
A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 46
ENDING INCUBATION DAY 51

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200

198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
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198 2000
198 2200
199 0000
199 0200
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199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200

200 0000
200 0200
200 0400
200 0600
200 0800
200 1000
200 1200
200 1400
200 1600
200 1800
200 2000



HATCHING BEGINS

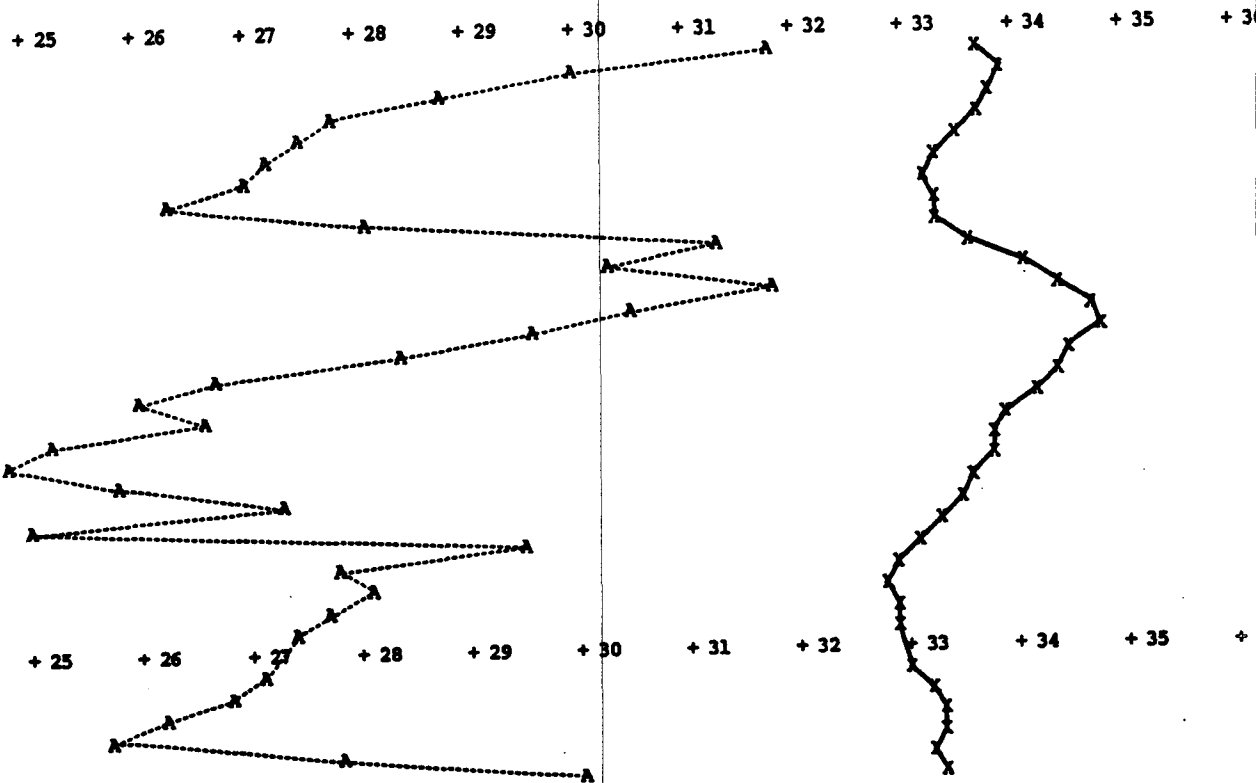
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 776

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 46
ENDING INCUBATION DAY 49

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
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197 1600
197 1800
197 2000
197 2200
198 0000
198 0200
198 0400
198 0600
198 0800
198 1000

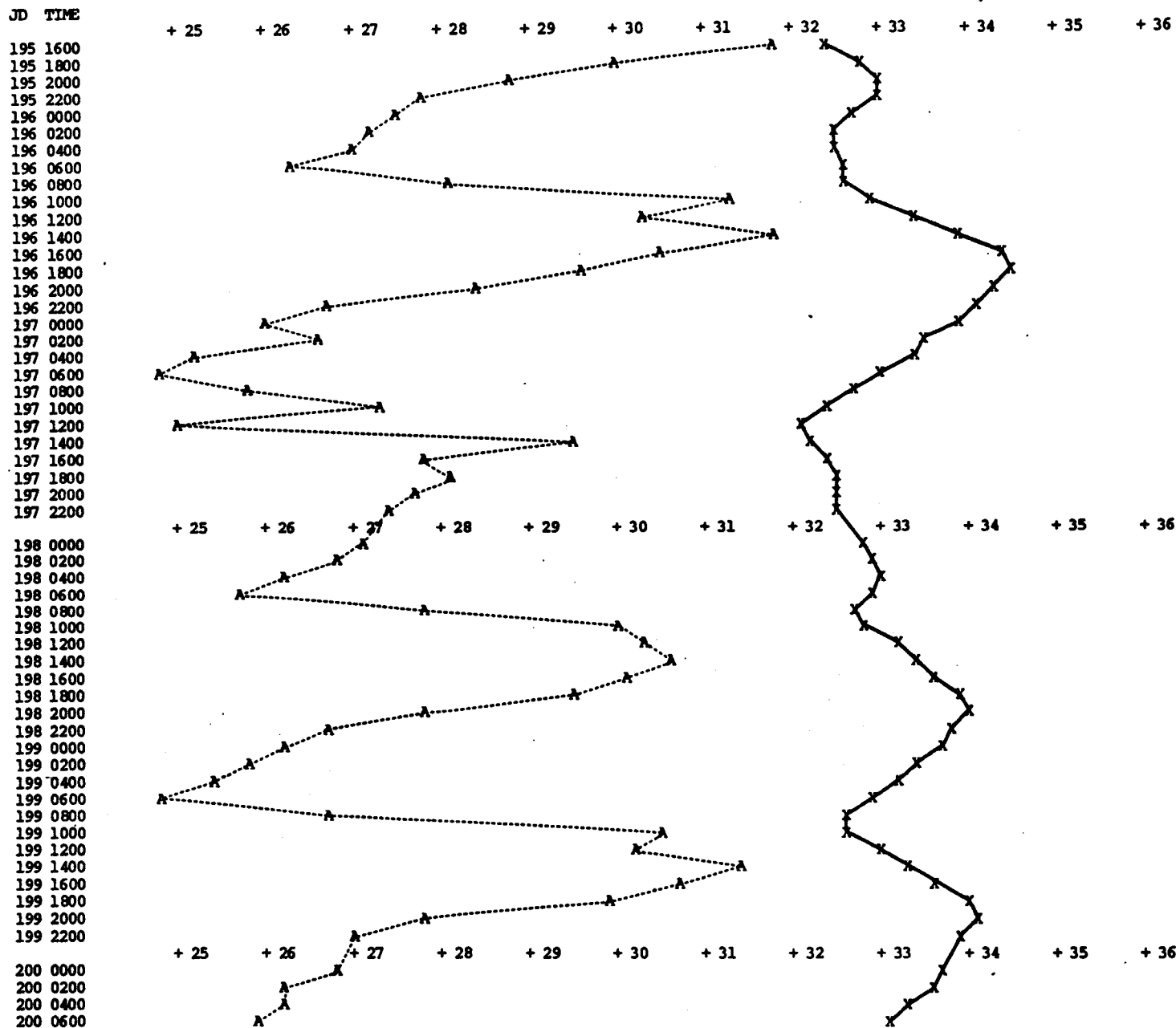


HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 797

A = AMBIENT TEMPERATURE, CELSIUS
 X = INCUBATION TEMPERATURE, CELSIUS
 JD = JULIAN DAY
 TIME = TIME IN HUNDRED HOURS
 BEGINING INCUBATION DAY 45
 ENDING INCUBATION DAY 51



HATCHING BEGINS

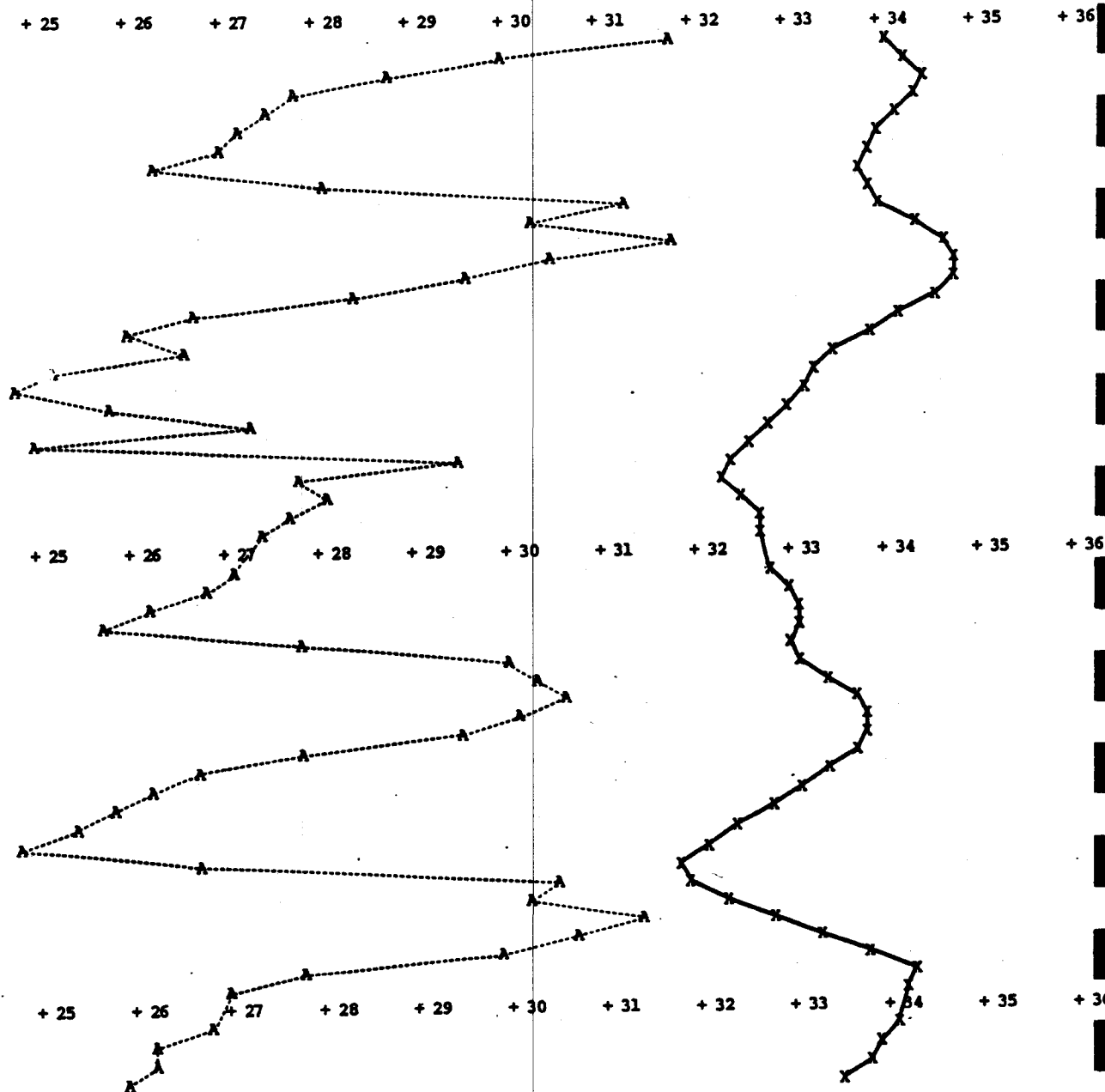
1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 798

A = AMBIENT TEMPERATURE, CELSIUS
X = INCUBATION TEMPERATURE, CELSIUS
JD = JULIAN DAY
TIME = TIME IN HUNDRED HOURS
BEGINNING INCUBATION DAY 45
ENDING INCUBATION DAY 51

JD TIME

195 1600
195 1800
195 2000
195 2200
196 0000
196 0200
196 0400
196 0600
196 0800
196 1000
196 1200
196 1400
196 1600
196 1800
196 2000
196 2200
197 0000
197 0200
197 0400
197 0600
197 0800
197 1000
197 1200
197 1400
197 1600
197 1800
197 2000
197 2200
198 0000
198 0200
198 0400
198 0600
198 0800
198 1000
198 1200
198 1400
198 1600
198 1800
198 2000
198 2200
199 0000
199 0200
199 0400
199 0600
199 0800
199 1000
199 1200
199 1400
199 1600
199 1800
199 2000
199 2200
200 0000
200 0200
200 0400
200 0600



HATCHING BEGINS

1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

BOX # 799

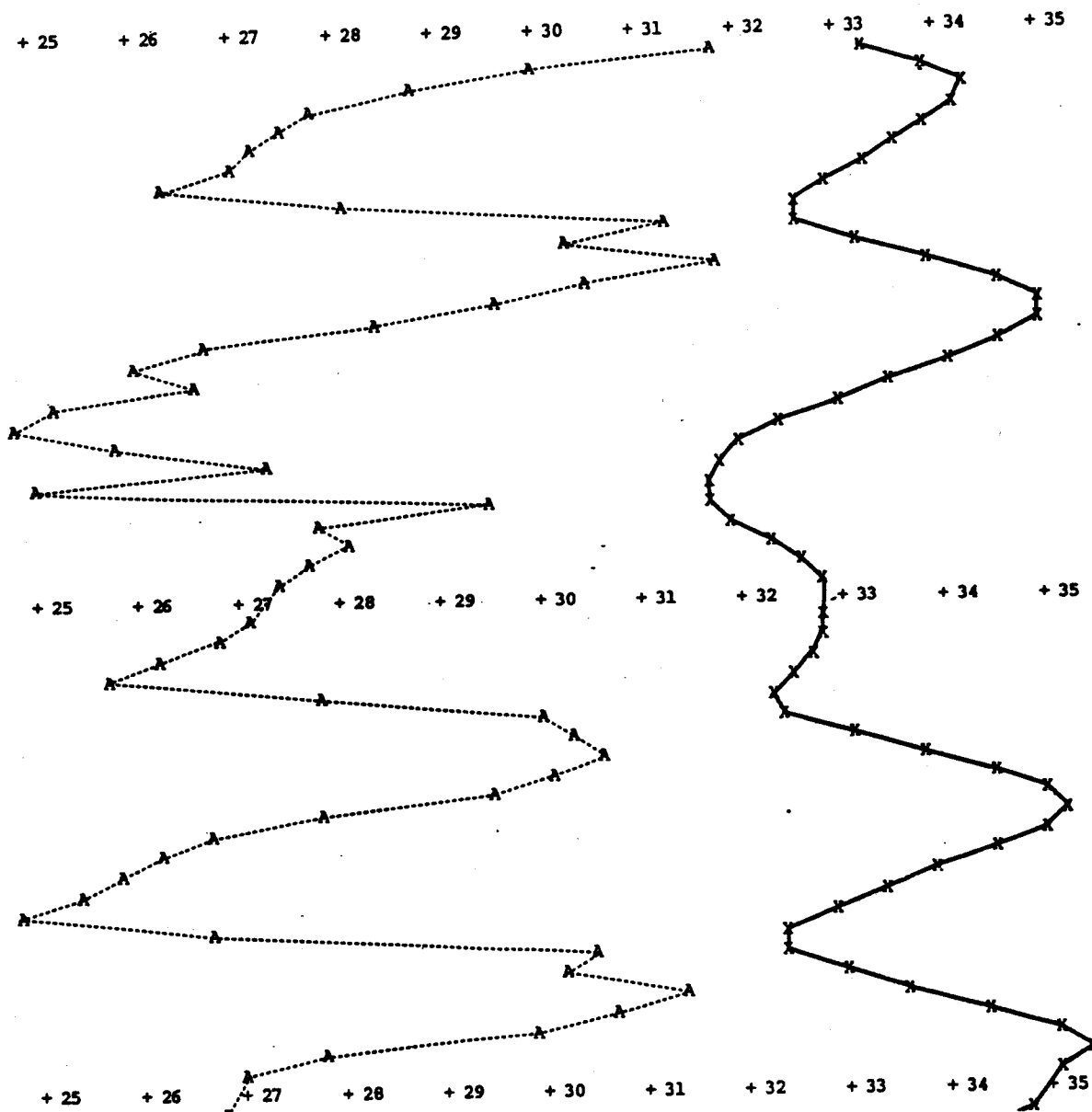
A = AMBIENT TEMPERATURE, CELSIUS
 X = INCUBATION TEMPERATURE, CELSIUS
 JD = JULIAN DAY
 TIME = TIME IN HUNDRED HOURS
 BEGINNING INCUBATION DAY 40
 ENDING INCUBATION DAY 50

JD TIME

195 1600
 195 1800
 195 2000
 195 2200
 196 0000
 196 0200
 196 0400
 196 0600
 196 0800
 196 1000
 196 1200
 196 1400
 196 1600
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 196 2000
 196 2200
 197 0000
 197 0200
 197 0400
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 197 0800
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 197 1200
 197 1400
 197 1600
 197 1800
 197 2000
 197 2200

198 0000
 198 0200
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 199 1200
 199 1400
 199 1600
 199 1800
 199 2000
 199 2200

200 0000

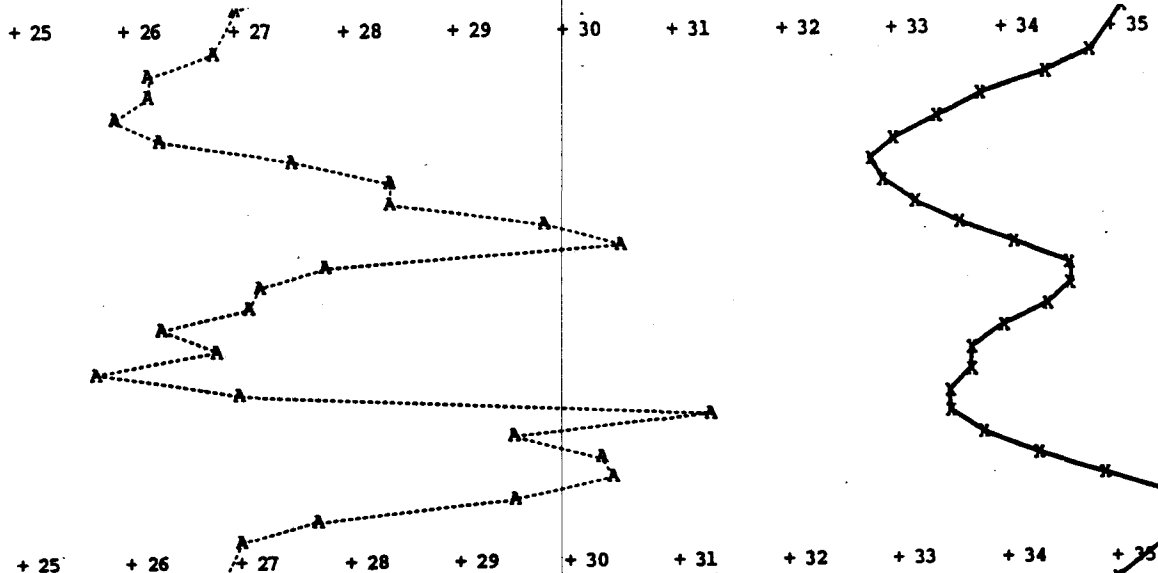


1984 KEMP'S RIDLEY INCUBATION TEMPERATURES

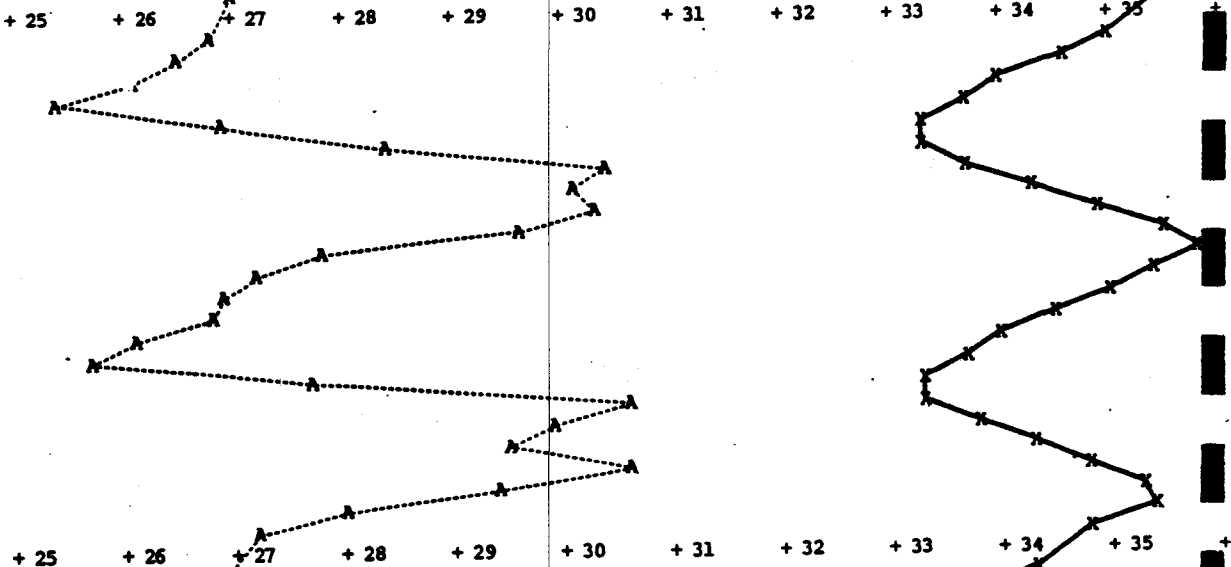
BOX # 799 (continued)

199 2200

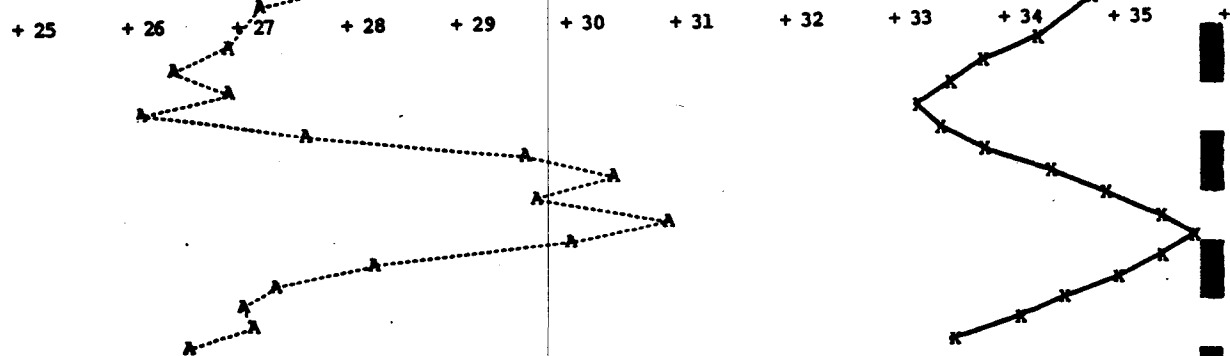
200 0000
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202 0000
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202 2200
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203 2200
203 0000



204 0200
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204 2200
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205 0200
205 0400
205 0600



HATCHING BEGINS

Appendix II. Pathology reports for 11 dead Kemp's Ridley hatchlings autopsied at Texas A&M Medical School in Galveston and 11 dead hatchlings necropsied at the University of Miami School of Medicine.

ANIMAL PATHOLOGY REPORT

TO:

BOB KING &
DRS. HENDRICKSON

Lab Number : CPR84-0029
Account No.: NEW
Procedure :

Adjustment :

Date Received: 08/08/84

Date Reported: 08/22/84

Owner: SEA TURTLES Ident: -

Sex:

Species: SEA TURTLE Breed: KEMP'S RIDLEY (LEPIDOCHELYS SP) Age:

Telephone Report: -----

Final Diagnosis and Comments:

LIVER, FATTY CHANGE, DIFFUSE, SEVERE
LIVER, VACUOLAR DEGENERATION, DIFFUSE, SEVERE
LUNG, CONGESTION, DIFFUSE, MODERATE
HEART, CONGESTION, DIFFUSE, MODERATE
BRAIN, CONGESTION, DIFFUSE, MODERATE
BRAIN, HEMORRHAGE, DIFFUSE, MODERATE
CARAPACE, GRAFT SITE, HEMORRHAGE, FOCAL, MILD
PLASTRON, GRAFT SITE, HEMORRHAGE, FOCAL, MILD
KIDNEY, CONGESTION, DIFFUSE, MILD

NOT REMARKABLE: SMALL INTESTINE, GALL BLADDER, STOMACH, ESOPHAGUS,
TRACHEA, PANCREAS, THYMUS, THYROID GLAND, YOLK SAC,
ADRENAL GLAND, LARGE INTESTINE

ENTIRE AND PARTIALLY EVISCERATED FORMALIN FIXED, KEMP'S SEA TURTLES
WERE SUBMITTED FOR HISTOLOGICAL EVALUATION. ANIMALS WITH AND WITH-
OUT SHELL GRAFTS WERE EVALUATED AND REPRESENTATIVE TISSUES FROM EACH
WERE TAKEN. CONSISTENT LESIONS IN ALL ANIMALS INCLUDED SEVERE
DIFFUSE, HEPATIC FATTY CHANGE AND HEPATOCELLULAR VACUOLAR DEGENERA-
TION. THE GRAFTING SITES WERE CHARACTERIZED BY MILD FOCAL HEMORRHAGE
WITH NO ASSOCIATED INFLAMMATORY CHANGES.

Norman H. Altman V.M.D. 52

Pathologist
GREGORY D. BOSSART V.M.D.

UNIVERSITY OF MIAMI
SCHOOL OF MEDICINE
PATHOLOGY REFERENCE SERVICES

DEPARTMENT OF PATHOLOGY
DIVISION OF COMPARATIVE PATHOLOGY (R-46)
P.O BOX 016960
MIAMI, FLORIDA 33101
305-547-6594

ANIMAL PATHOLOGY REPORT

TO:

Lab Number : CPR84-029A
Account No.: NEW
Procedure :

Adjustment :

Date Received: 08/08/84

Date Reported:

Owner: SEA TURTLES Ident: Sex:

Species: SEA TURTLE Breed: KEMP'S RIDLEY (LEPIDOCHELYS SP) Age:

Telephone Report: -----

Final Diagnosis and Comments:

THE REMAINING MULTIPLE ORGAN CHANGES OF CONGESTION AND HEMORRHAGE ARE NON-SPECIFIC RELATED TO ACUTE TERMINAL SHOCK. THE ETIOLOGY OF HEPATIC FATTY CHANGE AND DEGENERATION INCLUDES ANY MECHANISM WHICH INTERFERES WITH THE TRANSPORT AND METABOLISM OF FAT. THESE FREQUENTLY INCLUDE ENDOGENOUS OR EXOGENOUS INTOXICATIONS, METABOLIC DISORDERS, AND NUTRITIONAL DEFICIENCIES. THE CAUSE IN THESE TURTLES COULD NOT BE DETERMINED BUT WAS PROBABLY NOT ASSOCIATED WITH THE GRAFTING PROCEDURE. THE PRIMARY CAUSE OF DEATH WAS MOST LIKELY RELATED TO HEPATIC COMPROMISE.

Norman H. Altman V.M.D. 53

Pathologist
GREGORY D. ROSSART V.M.D.



TEXAS VETERINARY MEDICAL DIAGNOSTIC LABORATORY SYSTEM

Drawer 3040, College Station, Texas 77841-3040

FINAL REPORT - VETERINARIAN'S COPY

Date Shipped:

Date Received: 07/25/84

Owner Name:
Bob King

Vet. Account Number: 07481
Veterinarian's Name:
NATIONAL PARK SERVICES
ATTN: MR. BOB KING
9405 S. PADRE ISLAND DR.
CORPUS CHRISTI TX 78418

Prelim Report Dates: 08/02/84 07/31/84 07/30/84
Telephone Dates:
Final Date: 08/03/84

ASSIGNMENTS:

CS = TOX:	BAC: F	CPT:	PAR:	HIS: F	SER:	VIR:	NEC:	THR:	RAB:
AM = TOX:	BAC:	CPT:	PAR:	HIS:	SER:	VIR:	NEC:	THR:	RAB:

SPECIMENS SUBMITTED:

Swabs each turtle. One from surgical lesion--topside; one from abdominal cavity.

TESTS REQUESTED:

Culture, histopath.

SPECIES: Exotic

BREED: KEMP RIDLEY TURTLES

SEX: Unknown

AGE: Unknown

WT: Unknown

#ANIMALS IN GROUP:

#ANIMALS SICK:

#ANIMALS DEAD:

DATE OF DEATH LOSS:

ILLNESS DURATION: Unknown

CLINICAL HISTORY:

All died July 24, Clutch #2, tagged, 2 turtles; #12, not tagged, 2 turtles; #1, tagged, 2 turtles; #17, tagged, 1 turtle; #18, tagged, 2 turtles; #6, tagged, 2 turtles./rm

(CONTINUED ON NEXT PAGE)

CONCLUSION:

Laboratory results as listed.

COORDINATOR: Dr. Gayle

===== CHARGES =====			
Necrop:	Bact:	\$10.00	Cl Path:
Path:	\$33.00	Serol:	Toxic:
Bus:	Phone:	Ctn Rtn:	Pick-up:
Therio:	Other:		TOTAL: \$43.00

The fee for the Services of the Texas Veterinary Medical Diagnostic Laboratory are listed above. This charge doesn't include professional service fees by your Veterinarian or costs of preparing, packaging, and shipping of the specimens.

BILLED TO VETERINARIAN - You are advised to consult your Veterinarian for his analysis of this report and for any treatment that might be indicated.

Telephone
409/845-3414



Accession #: C84207303

TEXAS VETERINARY MEDICAL DIAGNOSTIC LABORATORY SYSTEM
Drawer 3040, College Station, Texas 77841-3040

***BACTERIOLOGY

AEROBIC AND ANAEROBIC CULTURES

Legend: * = Sensitivity Report Attached
1+ = Rare 2+ = Few 3+ = Moderate 4+ = Massive

ANIMAL/SPECIMEN ID: 2-2

The following tissues/specimens were cultured:

Specimens *****	Isolated *****	Pathogenic Significance *****
Entered on 8/02/84 17:01		
ABDOMINAL SWAB	*PSEUDOMONAS SP	Pot Path (3+)

* SENSITIVITY TEST REPORT FOR PSEUDOMONAS SP

Sensitive *****	Intermediate *****	Resistant *****
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GENTAMYCIN	NEOMYCIN	AMPICILLIN
KANAMYCIN		CARBENICILLIN
POLYMYXIN B		CEPHALOTHIN
PECTINOMYCIN		CHLORAMPHENICOL
TETRACYCLINES		DIHYDROSTREPMYCIN
		NITROFURANS
		SULFONAMIDES
		TRIM-SULFADIAZINE
		SULFACHLORPYRID

ANIMAL/SPECIMEN ID: 18-1

The following tissues/specimens were cultured:

Specimens *****	Isolated *****	Pathogenic Significance *****
ABDOMINAL SWAB	*PSEUDOMONAS SP	Pot Path (3+)

* SENSITIVITY TEST REPORT FOR PSEUDOMONAS SP

Sensitive *****	Intermediate *****	Resistant *****
--------------------	-----------------------	--------------------

GENTAMYCIN	NEOMYCIN	AMPICILLIN
KANAMYCIN		CARBENICILLIN
POLYMYXIN B		CEPHALOTHIN
SPECTINOMYCIN		CHLORAMPHENICOL
TETRACYCLINES		DIHYDROSTREPMYCIN
		NITROFURANS
		SULFONAMIDES
		TRIM-SULFADIAZINE
		SULFACHLORPYRID

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Accession #: C84207303

TEXAS VETERINARY MEDICAL DIAGNOSTIC LABORATORY SYSTEM

Drawer 3040, College Station, Texas 77841-3040

ANIMAL/SPECIMEN ID: 1-1

The following tissues/specimens were cultured:

Specimens *****	Isolated *****	Pathogenic Significance *****
ABDOMINAL SWAB	PROTEUS SPP	Contaminant (3+)
ABDOMINAL SWAB	ENTEROCOCCUS SPP	Contaminant (3+)

COMMENTS:

THE SAME ORGANISMS ISOLATED FROM 1-1 WERE ALSO RECOVERED FROM 1-2,
6-2, AND 17-1. -- WHITFORD/SGT

ANIMAL/SPECIMEN ID: 2-1

The following tissues/specimens were cultured:

Specimens *****	Isolated *****	Pathogenic Significance *****
ABDOMINAL SWAB	ENTERICS	Contaminant (1+)

ANIMAL/SPECIMEN ID: 6-1

The following tissues/specimens were cultured:

Specimens *****	Isolated *****	Pathogenic Significance *****
ABDOMINAL SWAB	ENTERICS	Contaminant (3+)
ABDOMINAL SWAB	BACILLUS SPP	Contaminant (3+)
ABDOMINAL SWAB	ENTEROCOCCUS SPP	Contaminant (3+)

ANIMAL/SPECIMEN ID: 12-1

The following tissues/specimens were cultured:

Specimens *****	Isolated *****	Pathogenic Significance *****
ABDOMINAL SWAB	MICROCOCCUS SPP	Contaminant (2+)

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TEXAS VETERINARY MEDICAL DIAGNOSTIC LABORATORY SYSTEM

Drawer 3040, College Station, Texas 77841-3040

ANIMAL/SPECIMEN ID: 12-2

The following tissues/specimens were cultured:

Specimens	Isolated	Pathogenic Significance
ABDOMINAL SWAB	ENTERICS	Contaminant (2+)
ABDOMINAL SWAB	BACILLUS SPP	Contaminant (2+)

HISTOPATHOLOGY REPORT

DOCTOR: JONES

Entered on 7/30/84

7/30/84 4 slides, several sections

Clutch #1, Turtle #1:

LIVER: Rather diffuse hepatic lipidosis.

INTESTINE: Loads of bacteria of various types and there is some degeneration of the epithelial cells lining the mucosa, but no inflammatory cell response is found so it's difficult to determine whether these are actually causing a problem or not.

HEART, ESOPHAGUS, STOMACH, LUNGS, SKELETAL MUSCLE: NSLR.

INTEGUMENT, CARAPACE, AND PLASTRON: Both these areas show a marked inflammatory response. In the carapace there are areas that suggested a fungal infection.

Clutch #1, Turtle #2:

LIVER: Fatty change.

PANCREAS, SPLEEN, HEART, TRACHEA, ESOPHAGUS, SKELETAL MUSCLE, LUNG: NSLR.

INTESTINE: Not as many bacteria found as in Turtle #1.

PLASTRON: Marked inflammation at the edge of the lesion and in the carapace lesion there is only a mild but generalized inflammatory response.

7/31/84 4 slides, several sections

Clutch #6, Turtle #1:

LIVER: Moderate fatty change.

INTESTINE: Sections of intestine contain numerous bacteria.

ESOPHAGUS, PANCREAS, THYROID, THYMUS, LUNGS, HEART: NSLR.

CARAPACE: Marked inflammation, pyogranulomatous reaction at one edge of the lesion.

PLASTRON: Very mild inflammatory reaction along one edge.

Clutch #6, Turtle #2:

INTESTINES: Massive numbers of bacteria throughout.

LIVER: Mild fatty change.

YOLK SACK, HEART, ESOPHAGUS, STOMACH, KIDNEY, LUNGS: NSLR.

CARAPACE: Marked inflammation around the edges of the lesion.

PLASTRON: Both edges show a marked inflammation extending along

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TEXAS VETERINARY MEDICAL DIAGNOSTIC LABORATORY SYSTEM

Drawer 3040, College Station, Texas 77841-3040

*****HISTOPATHOLOGY (CONTINUED):**

and into the underlying bone and bone marrow.

7/31/84 2 slides, several sections

Clutch #17, Turtle #1:

LIVER: Moderately severe diffuse fatty change.

INTESTINE: A few bacteria within the lumen.

KIDNEY, LUNGS, HEART, TRACHEA, GALLBLADDER: NSLR.

CARAPACE AND PLASTRON SECTIONS: Evidently were incorrectly sectioned as the lesion was not included.

Clutch #12, Turtle #1:

LIVER: Mild fatty change.

SMALL INTESTINE: Many bacteria.

TRACHEA, THYROID, STOMACH, HEART, ESOPHAGUS, LUNGS, KIDNEYS,

ADRENAL GLAND: No shell sections taken.

Clutch #12, Turtle #2:

LUNGS, INTESTINE, PANCREAS, KIDNEY, ADRENAL GLAND, HEART

ESOPHAGUS: NSLR.

LIVER: Moderate diffuse hepatic lipidosis.

COMMENT: Judging from the hepatic changes we either have a problem affecting all turtles or this is just the normal hepatic structures during the time these turtles subsisted mostly upon the yolk sac which contains a lot of lipids./rm

8/2/84 4 slides, several sections

Clutch #2, Turtle #1:

LIVER: Mild fatty change.

INTESTINE: Few bacteria but no lesions found.

HEART, TRACHEA, ESOPHAGUS, LUNGS, SKELETAL MUSCLE, THYMUS,

KIDNEY: NSLR.

CARAPACE AND PLASTRON: Both showing marked inflammation with the entire disk area inflamed.

Clutch #2, Turtle #2:

LIVER: Mild fatty change.

INTESTINE: One section shows a hemorrhagic enteritis with many bacteria within it.

ESOPHAGUS, HEART, THYMUS, STOMACH, PANCREAS, SPLEEN, LUNGS: NSLR.

CARAPACE AND PLASTRON: Both show very marked inflammation involving the entire site of the transplant.

COMMENT: I feel that overall the pattern is very suggestive of a bacterial type infection, plus I wonder since these animals are still in a very early stage if they are just not amenable to the stress of such a manipulation at this time of life. As to what bacteria it is, I am very suspicious of a Gram negative type but unfortunately we were unable to get a definitive diagnosis as we isolated so many different types. I wish I could find out whether in the leatherbacks or whatever type of turtle that was that this previous work was done if they had

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TEXAS VETERINARY MEDICAL DIAGNOSTIC LABORATORY SYSTEM

Drawer 3040, College Station, Texas 77841-3040

*****HISTOPATHOLOGY (CONTINUED):**

This marked inflammation at the transplant site that we've seen pretty consistently through all of the turtles examined. However, that one clutch turtles which did not have the transplants did not show any specific lesions throughout the viscera different from those that had the transplants. The consistent fatty liver I have had to assume that this is rather characteristic, particularly when these turtles are in their yolk sac nutrition period. It might be good to review the surgical technique of the transplant to see if there can be a possible improvement of the adherence of the acrylic on the transplant site and a tight enough adherence to prevent inflammation of the surgical site. I feel that the surgical site was contaminated from the exterior and not from a circulating source such as bacteria in the blood.

Clutch #18, Turtle #1:**LIVER:** Moderate fatty change.**LUNG, HEART, ESOPHAGUS, TRACHEA, SPLEEN, PANCREAS, INTESTINE, STOMACH:** NSLR.**CARAPACE AND PLASTRON:** Both show a marked inflammation of the transplant site and particularly the plastron with heterophils and fibrin throughout the entire surgical site.**Clutch #18, Turtle #2:****LUNGS:** Pulmonary hemorrhages and early acute pneumonia.**LIVER:** Mild fatty change.**HEART, ESOPHAGUS, INTESTINE, TRACHEA, SPLEEN, PANCREAS, KIDNEY:** NSLR.**CARAPACE AND PLASTRON:** Both show a marked inflammation involving the whole transplant site.

/rm

**Appendix III. Straight line carapace length and weight measurements
for each 1984 Kemp's Ridley hatchling.**

1984, BOX 512 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	41.95	14.20	46	42.00	14.39	91	40.80	13.53
2	39.25	13.80	47	42.35	14.62	92	42.20	14.69
3	39.70	13.12	48	41.75	13.91	93	41.00	14.06
4	39.10	13.09	49	41.15	14.60	94	41.30	15.45
5	41.35	13.88	50	41.85	14.22	95	42.40	13.66
6	40.65	14.00	51	42.45	15.65	96	40.80	12.90
7	42.20	14.77	52	40.70	13.84	97	41.05	13.34
8	42.15	14.87	53	42.60	14.65	98	40.80	13.45
9	41.10	13.67	54	43.30	15.64	99	41.30	14.46
10	42.05	15.44	55	41.00	14.77	100	35.90	10.47
11	41.20	14.82	56	41.20	13.35			
12	41.45	14.11	57	43.20	14.97			
13	38.55	12.66	58	39.60	13.22			
14	40.70	13.84	59	42.25	14.50			
15	40.20	13.41	60	39.60	13.51			
16	40.90	14.22	61	41.15	14.62			
17	40.95	14.05	62	42.60	15.10			
18	39.65	13.50	63	40.40	15.52			
19	40.65	14.19	64	41.45	14.28			
20	41.90	15.16	65	41.45	14.10			
21	41.35	14.44	66	42.35	14.31			
22	39.95	12.32	67	42.55	14.38			
23	43.15	14.92	68	36.90	11.59			
24	40.40	13.30	69	41.85	14.60			
25	41.60	13.79	70	41.90	14.33			
26	37.60	11.97	71	42.40	14.17			
27	42.95	15.50	72	42.05	14.50			
28	41.65	15.15	73	43.30	13.91			
29	43.40	15.10	74	40.30	12.72			
30	41.05	13.87	75	41.65	14.49			
31	41.05	13.66	76	42.25	14.35			
32	41.30	14.58	77	41.40	14.74			
33	41.40	14.90	78	41.35	14.69			
34	40.95	14.40	79	41.45	13.86			
35	40.35	12.79	80	40.45	13.14			
36	41.45	13.58	81	40.70	14.05			
37	41.75	14.91	82	41.90	13.83			
38	37.65	12.61	83	41.45	13.47			
39	41.75	13.93	84	42.95	15.22			
40	42.25	14.28	85	40.55	13.85			
41	41.90	14.81	86	40.70	14.70			
42	40.35	12.76	87	42.00	15.07			
43	40.40	13.91	88	41.20	14.49			
44	40.80	14.51	89	41.35	14.62			
45	37.20	12.16	90	40.45	14.98			

1984, BOX 513 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	43.35	15.27	46	43.80	15.99	91	42.90	16.20
2	43.65	15.75	47	43.70	16.36	92	43.20	15.46
3	43.30	15.88	48	42.70	15.92	93	43.70	16.03
4	44.75	15.40	49	43.65	15.43	94	44.10	15.46
5	43.60	15.36	50	43.00	15.39	95	43.35	16.37
6	41.90	15.05	51	44.25	15.85	96	42.60	15.56
7	42.99	15.02	52	42.15	14.95	97	43.40	15.32
8	43.60	16.05	53	43.65	15.66	98	44.35	17.16
9	43.20	16.25	54	42.80	16.18	99	44.20	15.96
10	42.70	15.69	55	43.20	15.92	100	42.95	15.91
11	43.10	15.10	56	42.55	14.62	101	43.15	15.79
12	43.45	16.13	57	43.85	15.81	102	42.60	15.34
13	43.30	15.82	58	44.30	15.66	103	43.60	15.74
14	43.05	15.00	59	42.85	15.77	104	42.60	15.69
15	45.15	16.37	60	42.95	14.80	105	42.15	15.10
16	44.10	15.77	61	44.25	15.34	106	43.10	15.80
17	42.30	14.78	62	44.20	15.41	107	43.35	15.74
18	43.10	16.18	63	44.05	16.21	108	43.95	16.00
19	44.55	16.33	64	44.70	15.82	109	43.05	15.87
20	43.60	16.06	65	42.35	15.88	110	43.65	15.64
21	42.40	16.12	66	43.55	16.58	111	44.15	16.87
22	42.90	16.19	67	42.55	14.39	112	43.20	15.12
23	42.70	15.60	68	42.50	15.35	113	43.05	15.57
24	44.25	16.02	69	43.40	15.01	114	43.45	15.04
25	44.05	16.08	70	45.20	16.60	115	43.35	16.11
26	42.65	15.52	71	44.95	16.95	116	42.55	15.83
27	44.15	16.56	72	43.10	15.23	117	42.50	15.53
28	42.70	15.78	73	44.65	16.26	118	43.60	15.49
29	43.15	15.04	74	43.80	15.53	119	42.20	15.17
30	43.05	16.29	75	43.70	15.82			
31	43.70	15.44	76	43.70	15.54			
32	42.20	14.50	77	44.40	16.22			
33	43.00	15.50	78	43.45	16.22			
34	44.55	16.10	79	43.45	15.44			
35	44.05	16.17	80	43.40	15.88			
36	42.80	15.43	81	44.15	16.05			
37	42.50	16.38	82	43.25	16.19			
38	44.00	15.92	83	43.80	15.92			
39	43.45	16.37	84	44.35	15.97			
40	43.35	15.31	85	44.00	15.92			
41	44.70	15.97	86	42.90	14.67			
42	42.90	16.11	87	43.15	15.17			
43	44.85	16.26	88	42.55	15.36			
44	43.70	15.55	89	44.10	15.02			
45	42.15	14.79	90	43.25	15.81			

1984, BOX 514 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	43.60	15.78	46	42.15	14.43	91	41.50	15.16
2	42.10	15.89	47	44.10	16.90	92	44.55	15.30
3	41.60	15.38	48	42.85	17.15			
4	41.30	15.43	49	42.80	16.72			
5	42.10	16.19	50	40.92	14.82			
6	43.05	16.59	51	42.40	16.93			
7	42.06	16.64	52	40.06	15.60			
8	42.50	17.16	53	42.05	15.93			
9	41.95	16.37	54	41.90	16.55			
10	41.60	16.28	55	43.40	15.86			
11	42.90	15.55	56	42.30	16.05			
12	43.30	15.01	57	42.15	16.81			
13	43.20	16.76	58	42.45	16.65			
14	42.10	15.96	59	43.55	17.04			
15	43.95	17.41	60	42.55	16.75			
16	42.15	16.31	61	39.85	14.50			
17	38.25	14.50	62	42.60	16.57			
18	43.40	16.15	63	43.30	16.35			
19	43.35	16.75	64	43.25	16.51			
20	42.65	15.87	65	41.80	16.08			
21	42.20	15.60	66	41.55	15.77			
22	43.70	17.30	67	41.30	15.35			
23	42.90	16.90	68	42.90	16.51			
24	43.60	16.87	69	42.80	17.16			
25	42.60	16.42	70	41.40	15.44			
26	42.76	16.49	71	43.10	16.90			
27	43.25	16.77	72	38.50	14.26			
28	41.05	14.91	73	42.10	16.00			
29	42.30	16.72	74	43.40	16.51			
30	41.70	15.03	75	41.00	15.54			
31	40.01	14.97	76	42.90	15.77			
32	14.50	15.40	77	41.80	15.46			
33	42.80	16.98	78	42.60	15.97			
34	40.02	14.81	79	42.95	15.70			
35	42.40	16.21	80	42.10	15.85			
36	43.45	16.45	81	42.25	16.23			
37	42.80	15.53	82	41.70	15.92			
38	41.40	14.98	83	43.25	17.24			
39	42.00	16.87	84	40.55	15.40			
40	42.70	15.74	85	43.00	16.49			
41	40.05	16.92	86	39.55	14.32			
42	41.45	15.01	87	41.10	15.68			
43	42.00	15.81	88	41.85	15.42			
44	42.10	16.80	89	39.60	14.90			
45	42.75	16.50	90	40.75	15.76			

1984, BOX 515 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	44.45	15.01	46	41.90	16.37	91	42.40	16.20
2	41.85	16.55	47	42.05	15.48	92	44.00	15.36
3	43.45	15.11	48	42.90	15.25	93	41.75	15.52
4	43.65	15.84	49	42.50	15.08			
5	43.05	15.83	50	43.05	14.46			
6	43.40	15.10	51	42.75	15.51			
7	42.15	15.11	52	41.90	15.98			
8	43.25	15.41	53	43.55	15.96			
9	42.35	16.22	54	43.45	15.54			
10	43.35	15.79	55	45.95	14.61			
11	42.65	15.89	56	43.10	15.86			
12	43.55	15.82	57	42.80	15.80			
13	43.05	15.18	58	42.65	15.92			
14	42.95	16.70	59	42.65	16.89			
15	43.15	15.46	60	42.60	16.23			
16	41.05	15.27	61	42.90	15.24			
17	44.05	15.98	62	42.80	14.79			
18	42.75	15.84	63	40.15	14.06			
19	43.30	15.41	64	43.45	15.08			
20	43.80	15.33	65	42.90	16.33			
21	43.50	15.99	66	44.00	16.03			
22	44.50	15.36	67	43.15	16.76			
23	43.55	16.72	68	44.30	16.98			
24	42.45	14.95	69	41.45	15.71			
25	42.60	16.17	70	43.05	14.79			
26	43.75	15.40	71	42.90	15.53			
27	42.10	13.21	72	43.00	16.10			
28	44.05	15.83	73	42.71	17.40			
29	44.20	15.35	74	41.55	17.06			
30	43.35	14.81	75	42.15	15.39			
31	42.90	14.84	76	41.80	16.63			
32	43.30	15.48	77	43.15	16.00			
33	42.00	15.46	78	42.15	15.25			
34	43.75	15.72	79	42.70	15.78			
35	43.25	15.55	80	43.80	15.03			
36	43.25	15.49	81	43.10	15.63			
37	43.25	16.11	82	42.10	15.28			
38	42.30	15.87	83	43.20	15.48			
39	42.90	15.21	84	41.90	17.13			
40	42.35	15.94	85	43.60	16.46			
41	43.45	14.18	86	42.90	15.02			
42	43.25	15.91	87	43.30	15.71			
43	42.85	15.24	88	43.95	15.75			
44	42.90	15.54	89	41.05	16.77			
45	43.40	16.41	90	42.65	17.40			

1984, BOX 765 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)
1	45.75	16.35
2	45.30	17.70
3	44.75	13.93
4	44.55	15.66
5	39.55	17.74
6	44.40	16.05
7	43.95	17.69
8	43.70	15.91
9	44.75	17.93
10	46.40	14.63
11	44.85	18.53
12	44.45	16.14
13	49.35	18.09
14	44.20	16.37
15	44.15	17.17
16	44.55	14.97
17	45.45	14.56
18	43.15	16.65
19	45.50	18.11
20	43.65	17.10
21	45.35	17.77
22	45.10	15.65
23	46.10	17.84
24	43.55	15.93
25	44.25	16.31
26	44.40	16.98
27	41.15	15.86
28	44.85	15.65
29	45.05	16.74
30	43.25	16.92
31	44.40	15.75
32	45.05	17.34
33	45.20	17.46
34	44.95	17.52
35	42.90	16.69
36	43.90	13.86
37	43.10	16.32
38	44.45	17.18
39	45.25	18.18
40	44.80	18.81
41	41.40	17.09
42	44.00	17.58
43	44.10	17.44

1984, BOX 766 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	43.30	17.02	46	44.30	17.20	91	43.70	15.67
2	43.15	16.43	47	43.35	15.50	92	44.80	15.16
3	44.80	16.34	48	43.55	16.46	93	44.70	17.18
4	45.05	16.70	49	44.80	16.38	94	43.65	17.81
5	42.65	16.22	50	43.25	16.28	95	42.75	16.74
6	44.15	15.78	51	43.75	16.77	96	42.35	16.89
7	44.10	17.36	52	44.30	15.38	97	40.80	16.12
8	44.65	16.85	53	43.25	17.00	98	42.85	16.68
9	44.95	16.38	54	44.55	16.79	99	40.70	17.40
10	43.45	16.87	55	44.65	17.24	100	44.15	17.00
11	43.55	16.29	56	44.95	16.61	101	42.30	17.07
12	44.60	16.30	57	44.55	15.90			
13	43.50	16.55	58	44.10	17.19			
14	43.95	17.04	59	43.45	16.73			
15	44.15	17.14	60	42.35	16.51			
16	42.70	15.53	61	44.50	16.19			
17	44.35	17.33	62	43.70	16.25			
18	44.20	16.21	63	44.80	17.09			
19	43.95	17.32	64	43.90	17.67			
20	44.90	16.48	65	43.85	17.53			
21	43.20	17.33	66	44.35	17.35			
22	44.85	16.61	67	44.05	15.59			
23	43.00	16.55	68	43.65	16.89			
24	44.55	15.03	69	43.95	17.09			
25	43.25	17.07	70	43.60	17.33			
26	43.45	16.72	71	45.50	16.96			
27	44.90	16.11	72	44.80	16.43			
28	44.95	16.55	73	41.60	16.68			
29	43.60	15.72	74	44.65	16.98			
30	44.80	15.89	75	43.50	15.73			
31	43.75	16.58	76	45.10	15.73			
32	43.25	16.63	77	44.60	16.55			
33	44.25	16.30	78	44.75	16.33			
34	42.95	15.57	79	44.85	13.52			
35	43.70	15.95	80	43.45	16.86			
36	43.30	16.43	81	44.85	16.16			
37	43.05	15.79	82	44.05	16.90			
38	43.15	16.61	83	44.05	16.58			
39	43.85	16.54	84	43.95	16.99			
40	45.15	16.33	85	44.55	15.88			
41	42.45	16.67	86	43.85	16.68			
42	41.90	16.43	87	43.25	16.08			
43	42.70	16.76	88	44.25	15.77			
44	42.30	16.17	89	43.80	15.31			
45	44.15	16.91	90	42.70	15.22			

1984, BOX 767 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	43.55	15.40	46	42.95	15.37
2	42.75	15.19	47	44.05	15.64
3	43.10	15.76	48	44.50	15.36
4	44.30	15.87	49	42.90	15.36
5	43.85	16.17	50	44.70	15.36
6	43.35	15.78	51	42.50	14.98
7	44.60	16.66	52	44.05	15.69
8	43.55	15.84	53	44.05	15.35
9	43.80	16.17	54	44.12	15.32
10	45.05	16.73	55	42.45	15.33
11	43.55	15.42	56	44.75	17.36
12	43.85	16.42	57	42.70	15.44
13	43.10	15.41	58	42.75	15.40
14	44.45	15.93	59	43.35	15.65
15	43.50	15.29	60	43.45	15.87
16	44.10	15.38	61	44.25	16.42
17	44.60	15.36	62	43.90	15.71
18	44.10	15.36	63	43.45	15.21
19	43.60	15.03	64	43.20	15.40
20	43.95	15.37	65	43.10	16.06
21	42.75	15.37			
22	44.60	15.36			
23	43.55	15.36			
24	43.65	15.45			
25	43.95	15.37			
26	44.10	16.41			
27	44.20	15.37			
28	43.95	15.36			
29	40.55	13.47			
30	43.35	15.37			
31	43.30	15.37			
32	43.25	14.73			
33	42.65	15.28			
34	43.40	15.37			
35	45.20	15.37			
36	42.80	15.37			
37	42.75	14.70			
38	42.75	15.38			
39	43.10	15.02			
40	43.60	15.36			
41	44.75	15.40			
42	43.60	14.58			
43	43.30	15.36			
44	44.45	15.37			
45	43.90	15.37			

1984, BOX 768 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	43.45	17.52	46	44.80	18.50
2	43.85	18.79	47	45.85	18.32
3	43.30	18.15	48	45.05	18.19
4	45.50	18.93	49	45.85	18.06
5	43.96	16.92	50	44.40	17.35
6	45.70	18.08	51	44.80	18.57
7	42.90	16.26	52	42.50	16.39
8	45.05	18.45	53	43.20	17.40
9	43.60	18.14	54	45.05	18.78
10	45.50	18.60	55	45.65	19.39
11	46.25	18.42	56	45.15	17.48
12	44.90	18.43	57	44.55	17.96
13	44.80	18.38	58	46.25	18.90
14	44.30	17.86	59	44.65	18.64
15	44.35	17.93	60	44.70	18.09
16	45.05	18.26	61	43.95	17.37
17	45.00	17.49	62	44.55	18.05
18	43.65	17.73	63	45.25	17.97
19	43.75	16.71	64	44.00	17.44
20	44.80	18.43	65	45.55	18.70
21	43.85	17.91	66	43.40	18.06
22	46.55	18.39	67	44.50	17.21
23	43.85	17.63	68	42.05	16.13
24	44.30	18.57	69	44.40	18.38
25	44.25	18.53	70	44.35	17.86
26	43.25	16.38	71	44.01	16.68
27	43.95	17.36	72	44.10	17.45
28	43.40	17.56	73	44.60	18.12
29	44.70	17.09	74	44.20	18.50
30	45.10	17.91	75	44.90	18.60
31	44.25	16.56	76	44.50	17.29
32	44.45	18.04	77	43.85	16.97
33	45.20	17.70	78	45.40	18.45
34	44.95	18.46	79	45.20	18.13
35	43.80	18.55	80	45.75	18.25
36	45.00	18.02	81	45.20	17.77
37	43.20	15.01	82	45.25	18.14
38	43.40	17.73	83	44.65	18.16
39	46.10	18.04	84	45.50	18.12
40	44.71	16.93	85	45.15	16.32
41	45.05	17.70	86	45.05	18.10
42	44.75	18.40	87	43.85	17.42
43	45.70	18.39	88	45.45	18.81
44	44.65	18.33			
45	42.60	17.28			

1984, BOX 769 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	43.35	16.00	46	42.45	15.50	91	42.60	15.04
2	43.70	16.22	47	43.20	15.45	92	42.00	13.92
3	43.50	15.53	48	42.10	14.99	93	42.05	15.42
4	43.05	15.40	49	42.85	15.11	94	41.20	14.05
5	42.70	15.71	50	42.55	15.59	95	42.95	14.76
6	42.45	15.08	51	41.65	15.42	96	43.10	15.44
7	42.80	15.05	52	43.15	15.29	97	42.20	14.80
8	42.40	14.19	53	41.95	14.19	98	41.90	15.46
9	41.75	14.59	54	43.30	15.21	99	43.15	15.83
10	43.60	16.31	55	41.55	14.06	100	42.15	14.92
11	43.20	15.09	56	42.85	15.79	101	43.10	15.15
12	43.60	15.84	57	42.30	15.08	102	42.00	14.40
13	43.20	15.64	58	42.55	14.95	103	42.25	14.70
14	42.25	14.24	59	43.05	15.89	104	41.45	14.70
15	41.30	15.04	60	41.55	15.10	105	41.70	14.44
16	42.65	15.22	61	42.25	15.64	106	43.45	15.53
17	42.05	15.25	62	41.80	14.50			
18	42.70	15.59	63	42.10	14.90			
19	42.40	15.57	64	42.65	15.52			
20	42.60	15.35	65	41.50	14.20			
21	41.70	14.78	66	42.65	14.90			
22	42.40	15.42	67	42.90	15.16			
23	42.50	14.88	68	43.05	15.23			
24	41.60	14.59	69	42.15	14.70			
25	40.90	13.87	70	43.00	15.41			
26	41.95	14.70	71	42.35	14.41			
27	43.20	15.26	72	42.75	15.46			
28	42.75	14.80	73	42.70	15.48			
29	42.40	15.29	74	44.55	16.91			
30	42.70	15.88	75	43.80	15.56			
31	43.05	15.29	76	42.30	15.17			
32	44.15	15.91	77	41.40	14.32			
33	44.10	17.10	78	42.85	15.51			
34	42.80	15.69	79	42.40	15.54			
35	42.35	15.67	80	43.40	15.55			
36	42.30	14.30	81	42.10	14.95			
37	40.85	14.97	82	42.20	13.75			
38	43.15	15.22	83	43.35	15.59			
39	43.25	14.84	84	43.70	16.07			
40	43.10	15.75	85	42.60	15.15			
41	42.10	15.18	86	42.55	14.88			
42	43.20	14.75	87	44.40	16.41			
43	42.15	14.71	88	41.85	14.59			
44	42.00	14.94	89	42.30	16.34			
45	42.75	15.57	90	42.20	14.61			

1984, BOX 770 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	42.95	14.61	46	44.90	17.66
2	43.35	14.50	47	44.00	15.60
3	44.30	16.43	48	43.60	15.05
4	45.20	16.67	49	43.20	13.96
5	44.00	14.86	50	42.40	13.70
6	44.75	17.15	51	43.50	15.25
7	44.90	16.37	52	43.35	15.52
8	43.00	14.09	53	43.95	15.92
9	41.95	13.09	54	43.10	14.50
10	43.50	15.44	55	44.85	16.52
11	42.75	14.03	56	45.70	17.57
12	45.50	17.69	57	46.30	17.93
13	44.40	15.92	58	43.60	14.62
14	44.55	16.84	59	44.90	17.10
15	45.60	18.12	60	44.35	16.20
16	43.45	15.71	61	42.00	13.45
17	45.25	16.67	62	44.75	16.02
18	42.90	13.54	63	43.95	16.89
19	43.70	15.55	64	43.15	14.22
20	45.75	17.76	65	45.20	16.98
21	46.85	18.08	66	45.50	17.30
22	43.60	15.71	67	42.80	13.68
23	45.25	16.13	68	44.75	15.50
24	44.45	15.69	69	44.65	16.02
25	44.05	16.58	70	45.85	17.72
26	44.55	17.17	71	43.65	15.74
27	44.80	16.51	72	40.95	15.35
28	45.15	16.41			
29	44.65	15.79			
30	45.40	17.73			
31	44.60	17.51			
32	44.50	15.94			
33	44.90	16.31			
34	44.50	16.85			
35	43.35	14.46			
36	45.90	16.92			
37	43.20	14.76			
38	42.85	14.82			
39	44.00	15.44			
40	43.75	15.35			
41	44.70	16.85			
42	42.40	13.84			
43	44.65	16.47			
44	45.15	17.47			
45	44.85	17.59			

1984, BOX 771 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	45.45	18.64	46	43.40	17.34	91	44.80	15.87
2	44.45	18.15	47	44.36	16.90	92	44.80	18.48
3	43.40	16.96	48	44.90	18.50	93	45.00	18.75
4	44.40	18.22	49	43.40	17.16	94	43.30	18.36
5	43.95	17.60	50	43.55	16.91	95	43.60	17.64
6	44.90	18.19	51	42.75	18.04	96	45.15	18.38
7	45.10	18.46	52	44.05	18.08	97	43.80	18.24
8	45.20	18.12	53	43.25	17.05	98	44.15	18.17
9	44.85	18.05	54	44.10	17.13	99	43.90	17.35
10	43.00	16.68	55	44.70	18.02	100	44.20	17.48
11	43.45	17.34	56	45.90	18.21	101	45.45	18.49
12	43.50	18.24	57	43.50	17.35	102	44.30	17.73
13	42.70	16.70	58	43.95	18.15	103	42.75	16.70
14	42.70	17.46	59	43.50	18.08	104	44.10	17.19
15	43.45	18.10	60	43.05	17.44	105	43.95	17.91
16	45.70	18.70	61	44.10	18.82	106	43.10	17.22
17	44.70	18.47	62	45.80	18.32	107	44.80	17.79
18	44.45	18.59	63	42.65	17.50			
19	45.15	19.26	64	44.40	18.34			
20	45.40	19.76	65	43.30	17.01			
21	43.45	17.34	66	43.70	17.42			
22	42.40	16.09	67	44.45	18.61			
23	44.45	17.43	68	43.65	17.92			
24	43.20	16.21	69	44.75	18.78			
25	44.85	17.82	70	43.90	18.45			
26	45.55	18.49	71	45.00	18.03			
27	45.40	17.79	72	45.15	18.13			
28	44.25	17.97	73	43.80	17.19			
29	44.25	17.94	74	42.60	17.22			
30	42.50	17.08	75	45.50	18.67			
31	45.25	18.44	76	44.05	17.71			
32	42.20	17.64	77	45.50	18.82			
33	44.35	17.97	78	44.65	18.19			
34	46.75	19.02	79	44.75	17.87			
35	44.15	18.24	80	46.00	18.14			
36	43.60	18.10	81	45.15	18.75			
37	44.40	17.91	82	44.25	18.47			
38	44.40	18.84	83	44.35	17.95			
39	42.85	17.36	84	46.05	18.75			
40	44.10	18.06	85	44.45	17.87			
41	44.55	18.57	86	43.20	17.90			
42	44.50	19.20	87	45.30	18.08			
43	45.15	17.89	88	44.65	18.48			
44	45.35	18.90	89	45.25	18.87			
45	43.70	16.56	90	43.00	17.61			

1984, BOX 772 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	43.25	16.46	46	43.80	15.99	91	45.05	17.14
2	44.35	16.70	47	44.35	16.53	92	43.85	15.33
3	45.30	16.92	48	44.95	16.76	93	43.75	16.71
4	44.40	16.25	49	44.50	17.71	94	44.50	17.08
5	44.40	16.95	50	43.80	17.06	95	44.05	16.37
6	44.10	16.45	51	45.55	16.47	96	45.90	17.23
7	44.85	16.44	52	41.05	14.63	97	46.15	16.74
8	44.55	16.72	53	45.15	17.12	98	44.65	16.97
9	43.85	15.85	54	45.30	16.91	99	43.40	16.37
10	45.20	16.59	55	43.80	16.37	100	44.25	16.62
11	44.65	16.74	56	44.40	17.14	101	45.05	16.89
12	44.25	16.38	57	44.20	16.56	102	45.25	17.07
13	43.50	16.33	58	43.65	16.44	103	44.25	16.35
14	44.20	16.35	59	42.40	16.24	104	45.35	17.49
15	45.30	16.77	60	45.20	16.58	105	44.05	15.94
16	44.15	16.69	61	45.60	17.22			
17	44.35	16.50	62	44.70	15.91			
18	43.00	15.96	63	43.35	16.82			
19	43.60	16.08	64	44.45	16.68			
20	45.10	17.63	65	44.65	16.41			
21	44.80	16.03	66	44.65	17.47			
22	44.40	16.64	67	45.25	17.01			
23	44.35	16.60	68	44.15	16.35			
24	44.70	17.05	69	43.75	16.01			
25	43.70	16.89	70	44.45	15.98			
26	44.70	16.68	71	44.90	16.93			
27	42.55	15.49	72	45.75	18.03			
28	44.05	16.63	73	44.95	16.58			
29	45.50	17.08	74	45.05	16.89			
30	45.05	17.11	75	44.65	16.24			
31	43.85	16.16	76	43.50	15.74			
32	43.50	15.72	77	44.30	16.03			
33	45.25	17.62	78	44.00	15.67			
34	45.00	17.13	79	42.65	16.38			
35	43.60	16.78	80	44.25	17.29			
36	44.10	16.29	81	44.75	16.63			
37	45.75	17.57	82	44.50	17.50			
38	42.55	14.71	83	43.95	16.08			
39	44.90	16.87	84	41.95	16.06			
40	44.55	17.50	85	44.30	16.09			
41	43.55	16.49	86	42.95	15.96			
42	43.90	17.17	87	45.35	17.46			
43	44.15	16.54	88	44.00	16.44			
44	45.20	17.28	89	45.20	17.09			
45	43.85	16.59	90	44.85	16.37			

1984, BOX 773 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	45.20	18.58	46	44.85	18.55
2	46.05	18.72	47	46.10	18.01
3	44.90	18.16	48	44.35	17.71
4	45.05	18.82	49	45.90	18.87
5	46.00	18.38	50	46.90	18.56
6	45.75	17.85	51	45.45	18.62
7	45.15	18.43	52	44.65	18.03
8	45.50	18.49	53	45.50	18.60
9	47.05	19.55	54	45.50	19.15
10	45.35	18.80	55	45.70	18.44
11	43.50	17.92	56	44.80	17.87
12	45.70	18.35	57	46.05	18.52
13	46.20	19.08	58	45.30	18.35
14	46.55	18.66	59	46.95	19.05
15	46.05	19.28	60	45.00	18.41
16	46.00	18.46	61	46.20	19.00
17	45.55	18.81	62	45.55	18.23
18	45.40	18.85	63	46.45	18.05
19	45.00	18.82	64	45.25	18.74
20	46.80	18.98	65	46.00	18.97
21	45.90	18.34	66	45.30	18.08
22	46.15	19.15	67	46.70	19.16
23	45.75	18.94	68	44.55	18.85
24	46.50	19.15	69	45.45	18.16
25	45.30	19.18	70	46.60	18.50
26	45.15	19.13	71	45.55	18.26
27	46.00	20.06	72	45.25	18.41
28	45.35	18.51	73	47.20	18.41
29	45.70	18.56	74	46.15	18.74
30	46.40	18.65	75	46.25	18.58
31	46.15	18.43	76	46.05	18.35
32	46.40	18.67	77	46.05	18.64
33	46.75	18.02	78	46.55	18.71
34	45.60	18.99	79	45.40	18.17
35	47.00	19.16	80	45.60	18.66
36	45.55	18.41	81	45.25	18.87
37	44.05	17.94	82	45.85	18.18
38	46.55	18.51	83	45.35	18.30
39	45.90	17.97	84	44.95	18.54
40	45.95	18.68	85	45.35	18.29
41	45.40	18.35			
42	45.75	18.70			
43	45.20	18.44			
44	45.50	18.53			
45	45.55	18.28			

1984, BOX 774 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	44.30	15.32	46	44.10	16.40	91	45.70	16.81
2	43.00	15.48	47	43.80	16.45	92	45.55	17.10
3	44.35	16.04	48	44.15	15.84	93	44.00	15.88
4	43.50	15.36	49	44.80	16.21	94	44.05	16.55
5	44.15	16.34	50	43.80	16.68	95	43.70	16.03
6	44.25	15.46	51	44.90	16.84	96	43.50	16.26
7	43.25	15.76	52	45.35	17.44	97	43.90	16.77
8	43.85	15.37	53	44.65	16.72	98	44.55	17.07
9	44.80	16.14	54	44.20	16.92	99	44.25	16.57
10	45.20	16.27	55	45.15	16.78	100	44.70	16.89
11	43.95	16.23	56	44.50	16.32			
12	44.10	15.39	57	44.95	16.63			
13	46.00	16.61	58	44.05	16.76			
14	44.80	17.00	59	44.00	16.36			
15	44.50	17.55	60	43.30	15.72			
16	44.15	16.04	61	44.30	16.98			
17	44.05	16.61	62	39.25	16.85			
18	43.25	15.27	63	42.10	16.22			
19	44.60	16.19	64	44.00	16.00			
20	43.40	16.29	65	44.30	16.62			
21	45.50	17.06	66	43.90	17.07			
22	43.60	16.96	67	44.70	16.81			
23	44.55	16.99	68	42.15	14.51			
24	44.90	16.83	69	43.85	15.89			
25	45.55	16.73	70	44.00	16.57			
26	42.40	14.80	71	44.70	16.92			
27	45.15	16.79	72	45.15	16.96			
28	42.70	15.46	73	45.15	16.83			
29	44.45	16.56	74	43.75	15.85			
30	44.50	16.76	75	45.30	17.11			
31	44.60	16.56	76	45.00	17.25			
32	43.55	16.42	77	44.05	16.21			
33	44.90	17.09	78	44.85	16.56			
34	43.80	15.97	79	44.65	16.85			
35	44.35	15.96	80	44.90	16.35			
36	44.20	16.79	81	44.00	15.57			
37	45.70	16.70	82	44.90	17.04			
38	44.70	16.36	83	43.10	15.53			
39	44.85	17.01	84	45.40	16.68			
40	45.00	16.68	85	44.05	15.43			
41	44.75	15.75	86	44.55	16.23			
42	44.45	16.31	87	44.25	16.87			
43	44.95	16.07	88	44.10	16.62			
44	44.15	16.91	89	44.60	16.85			
45	43.05	16.06	90	44.30	16.42			

1984, BOX 775 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	45.05	17.77	46	46.40	18.50
2	44.80	17.95	47	44.45	17.90
3	44.90	17.61	48	43.30	16.71
4	44.25	17.46	49	44.65	17.53
5	44.95	17.14	50	44.45	17.51
6	44.50	16.59	51	43.40	16.25
7	44.60	17.18	52	44.20	17.54
8	44.20	17.91	53	45.40	18.01
9	44.65	18.15	54	44.25	16.68
10	43.35	16.73	55	41.85	15.91
11	44.20	17.03	56	43.80	17.43
12	44.25	17.08	57	44.25	17.34
13	43.40	16.38	58	42.00	17.34
14	44.85	18.20	59	43.45	16.93
15	44.00	15.80	60	43.05	16.80
16	45.15	17.08	61	44.95	17.23
17	43.35	16.73	62	45.30	17.67
18	43.90	16.60	63	45.45	17.83
19	45.20	17.82	64	43.85	17.93
20	45.25	18.52	65	44.95	17.39
21	43.30	16.16	66	42.65	16.65
22	43.05	15.74	67	43.65	17.00
23	45.05	18.07	68	43.00	16.61
24	43.35	17.40	69	43.25	16.35
25	43.10	17.27	70	44.10	16.52
26	44.50	17.32	71	44.20	17.59
27	46.45	18.69	72	44.15	18.03
28	45.55	17.83	73	41.85	16.03
29	44.80	17.34	74	44.40	18.14
30	43.90	16.90	75	42.65	16.56
31	43.30	16.67	76	45.05	18.43
32	44.00	17.75	77	44.45	17.60
33	43.70	17.46	78	44.20	17.37
34	43.50	17.39	79	44.35	17.84
35	45.25	18.30	80	45.50	18.46
36	44.10	18.18	81	42.50	15.93
37	43.80	16.86			
38	44.20	17.43			
39	42.90	15.94			
40	44.90	18.12			
41	44.90	17.31			
42	43.32	17.70			
43	44.42	16.83			
44	43.35	17.16			
45	42.05	16.15			

1984, BOX 776 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	42.90	16.31	46	43.30	16.13	91	42.75	16.00
2	43.90	17.75	47	43.40	17.27	92	43.40	17.31
3	43.60	16.85	48	42.80	16.60	93	43.25	16.62
4	42.75	17.89	49	42.65	17.46	94	43.50	17.71
5	41.60	16.04	50	42.55	16.91	95	42.80	16.85
6	42.75	17.09	51	42.70	16.38	96	43.65	16.95
7	43.90	17.95	52	42.80	17.11	97	42.65	18.56
8	42.75	16.70	53	42.70	16.85	98	42.35	16.89
9	44.75	17.97	54	42.95	16.86	99	43.60	17.25
10	43.40	17.87	55	43.60	17.52	100	43.00	17.46
11	42.60	16.30	56	44.60	17.07	101	43.45	17.71
12	43.25	17.24	57	44.45	17.06	102	43.10	16.88
13	42.80	16.77	58	43.60	17.42	103	42.00	16.22
14	41.65	15.88	59	43.70	15.12	104	44.10	17.00
15	43.30	16.66	60	43.30	17.55	105	44.70	17.18
16	43.15	17.25	61	44.00	17.14	106	42.60	16.67
17	43.30	16.05	62	43.65	17.42	107	44.00	16.68
18	42.75	17.00	63	43.50	17.03	108	43.25	16.13
19	42.90	16.97	64	42.10	16.34	109	43.30	15.62
20	43.20	17.68	65	43.35	16.00	110	41.75	16.12
21	43.50	17.14	66	43.10	17.57			
22	43.70	16.96	67	42.10	15.99			
23	44.70	17.03	68	41.45	16.71			
24	43.30	18.12	69	44.45	17.57			
25	43.40	17.46	70	44.15	17.47			
26	45.55	17.24	71	42.50	16.33			
27	43.10	16.48	72	43.25	16.24			
28	43.55	16.77	73	43.90	17.76			
29	42.00	16.11	74	45.05	17.18			
30	43.25	18.35	75	43.15	17.05			
31	43.25	17.33	76	43.80	16.90			
32	42.50	16.66	77	44.15	17.21			
33	43.35	16.67	78	43.40	16.69			
34	43.35	16.48	79	43.20	16.34			
35	42.90	16.85	80	43.20	17.08			
36	43.55	17.01	81	44.30	17.88			
37	43.20	18.14	82	43.25	16.48			
38	42.45	16.53	83	44.60	17.32			
39	44.30	17.28	84	43.00	17.25			
40	44.45	16.63	85	43.70	16.83			
41	43.70	17.17	86	42.80	17.01			
42	43.85	17.00	87	43.40	17.23			
43	42.40	16.51	88	42.55	17.10			
44	44.15	16.76	89	42.10	17.03			
45	42.30	16.24	90	43.60	17.01			

1984, BOX 797 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	42.15	16.65	46	43.15	16.92	91	44.55	17.08
2	43.35	15.75	47	45.05	17.28	92	44.20	17.60
3	41.65	15.86	48	43.15	15.44	93	44.65	16.57
4	41.95	16.60	49	42.40	16.82	94	43.90	17.02
5	43.90	15.86	50	44.30	17.46	95	45.25	17.27
6	44.25	18.03	51	44.30	16.41	96	43.35	16.42
7	44.10	17.30	52	42.25	16.29	97	43.38	17.06
8	41.35	17.53	53	41.80	17.42	98	41.55	15.72
9	42.50	17.84	54	43.10	16.14	99	44.15	16.89
10	43.65	16.94	55	43.90	16.01	100	42.65	15.52
11	42.65	17.65	56	42.05	15.75	101	44.00	16.88
12	42.80	17.42	57	43.50	15.55	102	40.45	16.18
13	43.60	16.88	58	44.00	17.75			
14	43.05	16.59	59	40.35	17.36			
15	41.30	15.45	60	43.75	15.86			
16	44.30	16.57	61	42.00	15.22			
17	43.25	15.27	62	43.50	15.92			
18	43.25	16.60	63	42.65	18.00			
19	43.70	17.40	64	42.55	16.57			
20	43.35	17.60	65	42.90	16.91			
21	43.35	16.52	66	43.35	17.23			
22	43.15	15.39	67	43.75	18.13			
23	44.65	15.53	68	41.45	17.24			
24	42.90	16.78	69	43.40	17.50			
25	43.65	17.17	70	43.05	17.02			
26	43.75	16.64	71	45.10	16.84			
27	43.15	17.70	72	43.40	16.62			
28	43.75	16.13	73	42.90	15.37			
29	43.40	17.22	74	41.30	16.16			
30	44.15	17.45	75	43.10	15.37			
31	42.85	15.50	76	43.50	16.56			
32	43.20	16.07	77	43.05	16.05			
33	43.65	16.21	78	43.75	17.28			
34	42.20	16.53	79	45.30	16.58			
35	45.00	17.95	80	44.45	16.67			
36	42.75	17.03	81	42.35	15.51			
37	43.75	15.89	82	44.00	15.97			
38	43.40	15.90	83	43.85	16.40			
39	43.40	17.40	84	43.34	16.60			
40	43.50	17.93	85	43.90	15.78			
41	43.15	18.31	86	43.05	16.25			
42	44.15	16.73	87	43.30	15.63			
43	44.00	16.25	88	44.45	16.92			
44	43.65	15.99	89	44.05	16.66			
45	43.10	16.23	90	43.40	15.48			

1984, BOX 798 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

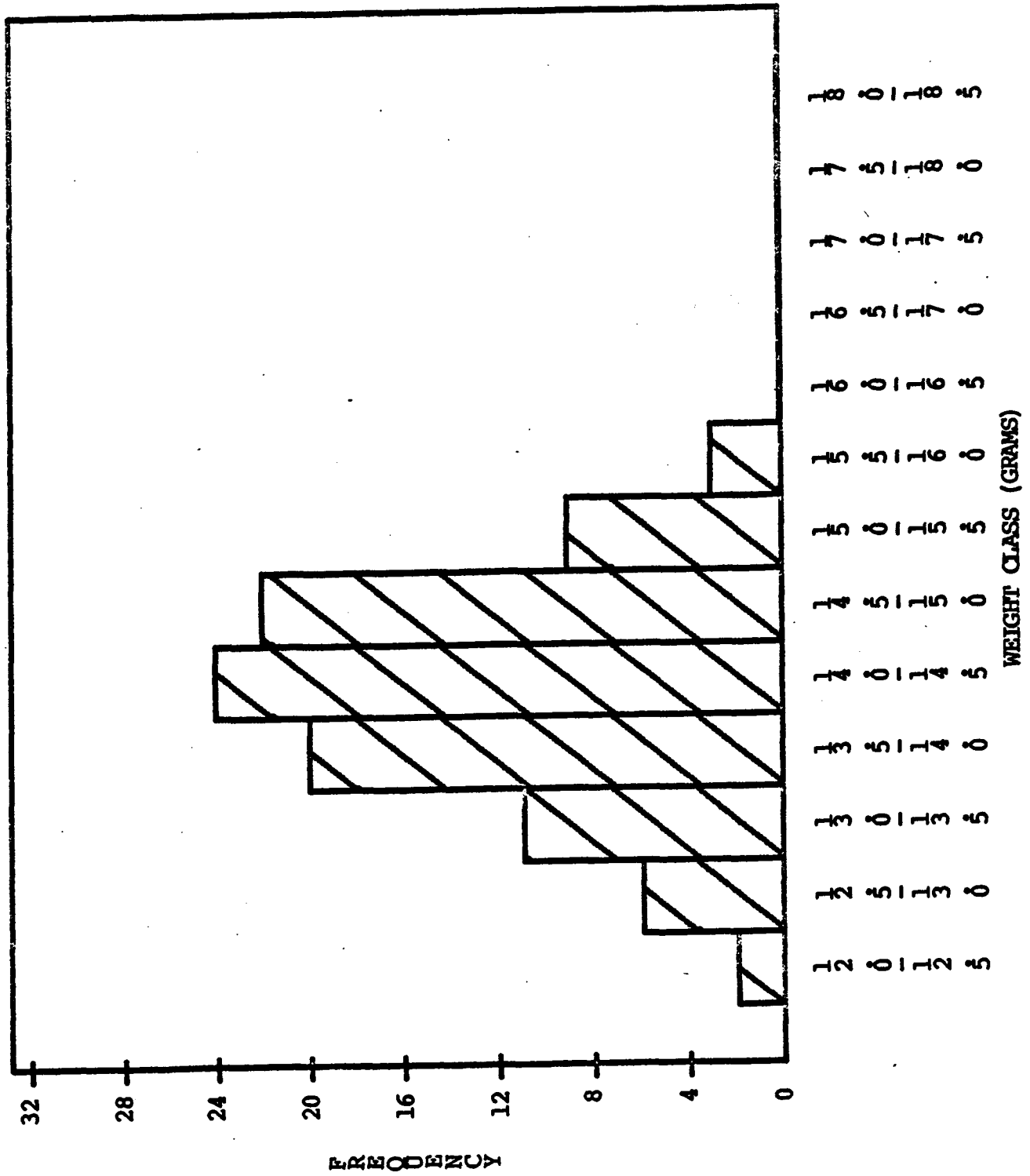
No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	40.65	16.11	46	43.75	16.27	91	43.45	14.48
2	44.75	15.06	47	44.65	16.26	92	44.30	15.69
3	42.85	16.21	48	42.00	16.01	93	44.00	15.98
4	43.35	16.29	49	42.45	16.38	94	44.55	15.09
5	43.95	15.09	50	44.35	13.94	95	42.10	16.39
6	42.45	15.33	51	43.35	14.92	96	43.50	15.98
7	43.45	15.22	52	43.05	15.43	97	43.30	16.36
8	42.65	16.09	53	40.45	16.23	98	43.70	16.45
9	42.75	16.22	54	43.60	15.08	99	44.50	15.98
10	43.05	15.37	55	44.45	16.40	100	44.35	15.56
11	43.95	15.37	56	44.45	15.95	101	44.05	15.20
12	44.35	15.37	57	40.50	12.47	102	44.90	17.46
13	44.00	14.25	58	44.05	16.35	103	43.65	16.53
14	43.35	15.37	59	42.55	16.12	104	41.25	16.35
15	44.50	15.37	60	41.80	15.98	105	44.60	16.76
16	40.85	15.79	61	43.70	16.53	106	43.15	16.81
17	43.15	15.36	62	44.70	16.20			
18	39.55	15.36	63	44.10	14.93			
19	43.05	15.16	64	43.60	15.52			
20	43.15	15.36	65	42.80	15.66			
21	44.75	15.32	66	43.20	14.38			
22	41.05	15.36	67	44.10	15.50			
23	43.70	15.36	68	41.80	15.48			
24	43.05	15.37	69	43.45	16.58			
25	43.65	15.94	70	43.00	16.51			
26	41.80	15.76	71	42.95	15.94			
27	43.50	15.50	72	43.10	16.08			
28	44.00	16.25	73	42.80	15.05			
29	42.80	15.20	74	44.00	16.90			
30	42.75	16.06	75	44.15	16.77			
31	43.70	15.86	76	43.40	15.76			
32	43.50	16.93	77	44.10	16.30			
33	44.50	16.15	78	44.85	16.34			
34	43.00	14.30	79	42.90	15.96			
35	39.70	16.31	80	44.65	15.30			
36	43.35	15.74	81	44.90	15.97			
37	41.70	16.25	82	43.70	14.94			
38	43.60	15.59	83	42.80	15.93			
39	42.55	14.93	84	43.50	16.82			
40	41.55	15.23	85	43.50	16.03			
41	43.25	15.12	86	42.80	16.05			
42	43.05	16.49	87	42.10	15.53			
43	41.40	14.68	88	42.90	16.03			
44	44.15	14.51	89	45.00	15.52			
45	43.75	14.37	90	41.95	15.08			

1984, BOX 799 PADRE ISLAND KEMP'S RIDLEY HATCHLINGS

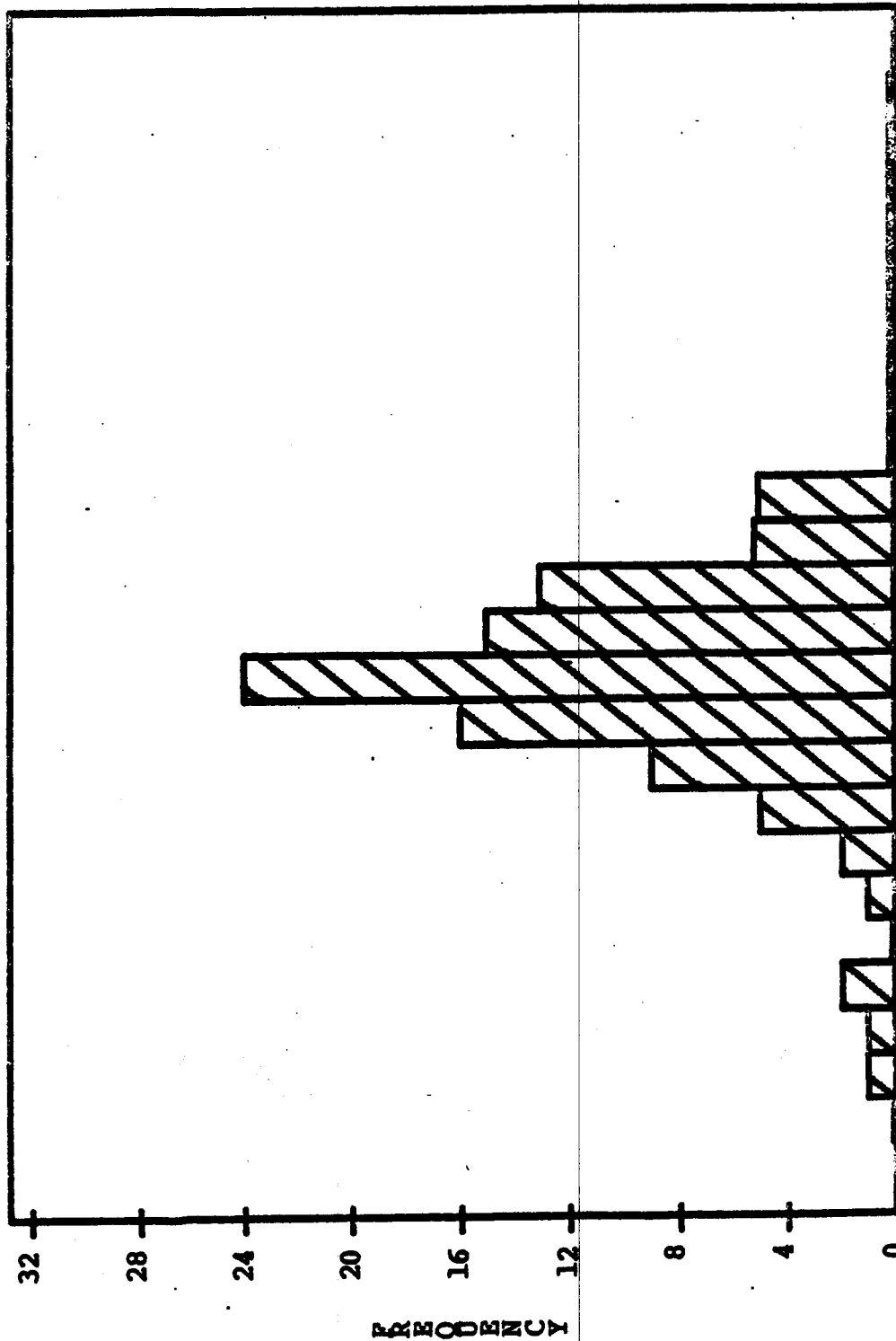
No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)	No.	Length (mm)	Weight (g)
1	41.80	15.05	46	44.00	17.00	91	42.65	15.54
2	42.75	16.30	47	41.70	16.00	92	43.45	17.03
3	42.30	14.60	48	41.40	16.36	93	43.10	16.97
4	42.10	15.43	49	42.25	15.63	94	43.25	16.24
5	42.75	15.20	50	42.65	16.34	95	43.60	16.53
6	43.70	17.00	51	42.80	16.59	96	42.45	15.20
7	43.15	15.96	52	42.50	15.45	97	44.80	17.62
8	43.75	17.40	53	42.00	15.26	98	43.85	17.32
9	42.35	14.99	54	42.80	16.93	99	43.10	16.30
10	43.30	16.08	55	43.20	15.96			
11	41.20	15.17	56	42.90	16.66			
12	44.25	17.63	57	41.90	14.83			
13	42.10	15.20	58	43.05	16.83			
14	40.70	14.34	59	42.50	16.28			
15	43.50	16.48	60	42.60	17.10			
16	43.25	16.54	61	41.20	15.44			
17	43.30	16.12	62	42.85	16.42			
18	42.65	17.32	63	41.60	13.76			
19	43.35	17.03	64	44.25	18.11			
20	41.95	16.44	65	43.60	16.71			
21	43.05	17.10	66	43.30	15.97			
22	44.10	15.77	67	41.50	15.96			
23	44.10	16.51	68	42.00	15.41			
24	42.70	16.58	69	44.45	17.20			
25	42.85	17.58	70	42.35	14.55			
26	43.00	16.16	71	44.05	16.92			
27	43.35	16.58	72	43.25	16.61			
28	43.70	16.86	73	41.20	15.79			
29	43.70	16.67	74	43.80	16.28			
30	40.80	15.39	75	42.15	15.73			
31	43.10	16.04	76	43.80	16.41			
32	42.50	16.49	77	43.55	16.28			
33	44.55	16.41	78	42.75	15.36			
34	43.75	17.47	79	44.20	15.70			
35	42.00	15.86	80	43.30	16.26			
36	42.55	16.39	81	41.80	16.83			
37	42.25	15.43	82	43.45	15.51			
38	43.80	17.67	83	42.85	15.67			
39	42.55	15.95	84	41.35	14.73			
40	43.75	16.16	85	42.70	16.85			
41	43.50	16.49	86	42.25	15.51			
42	42.25	15.69	87	43.40	16.26			
43	42.95	15.94	88	42.90	14.98			
44	42.30	15.92	89	43.25	15.80			
45	42.95	16.78	90	43.30	16.75			

Appendix IV. Histograms of straight line carapace lengths and weights for each clutch of 1984 Kemp's Ridley hatchling and for all hatchlings considered collectively.

1984- BOX 512 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=100



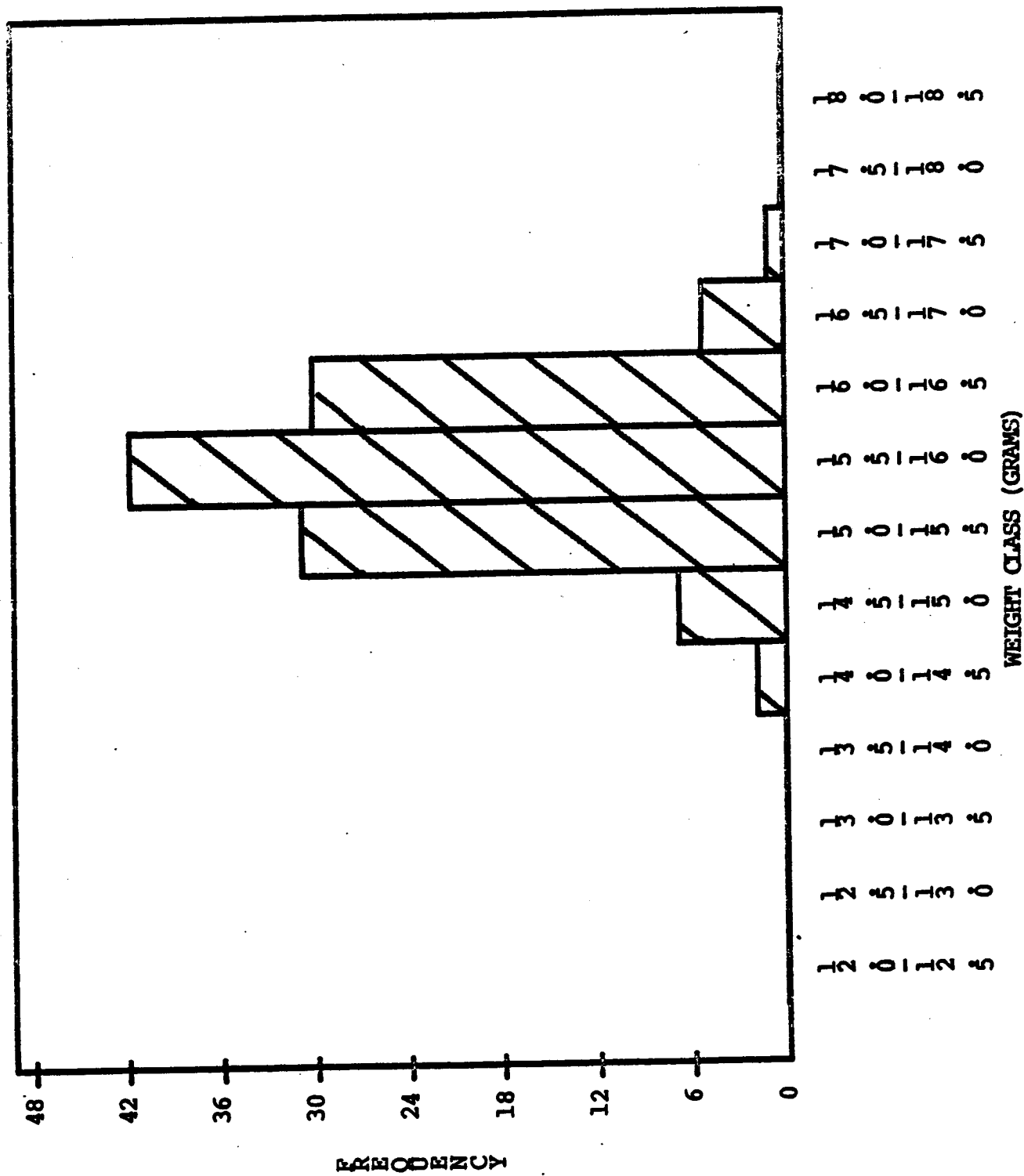
1984- BOX 512 KEMP'S RIDLEY HATCHLING SL. CARAPACE LENGTH (MM) n=100



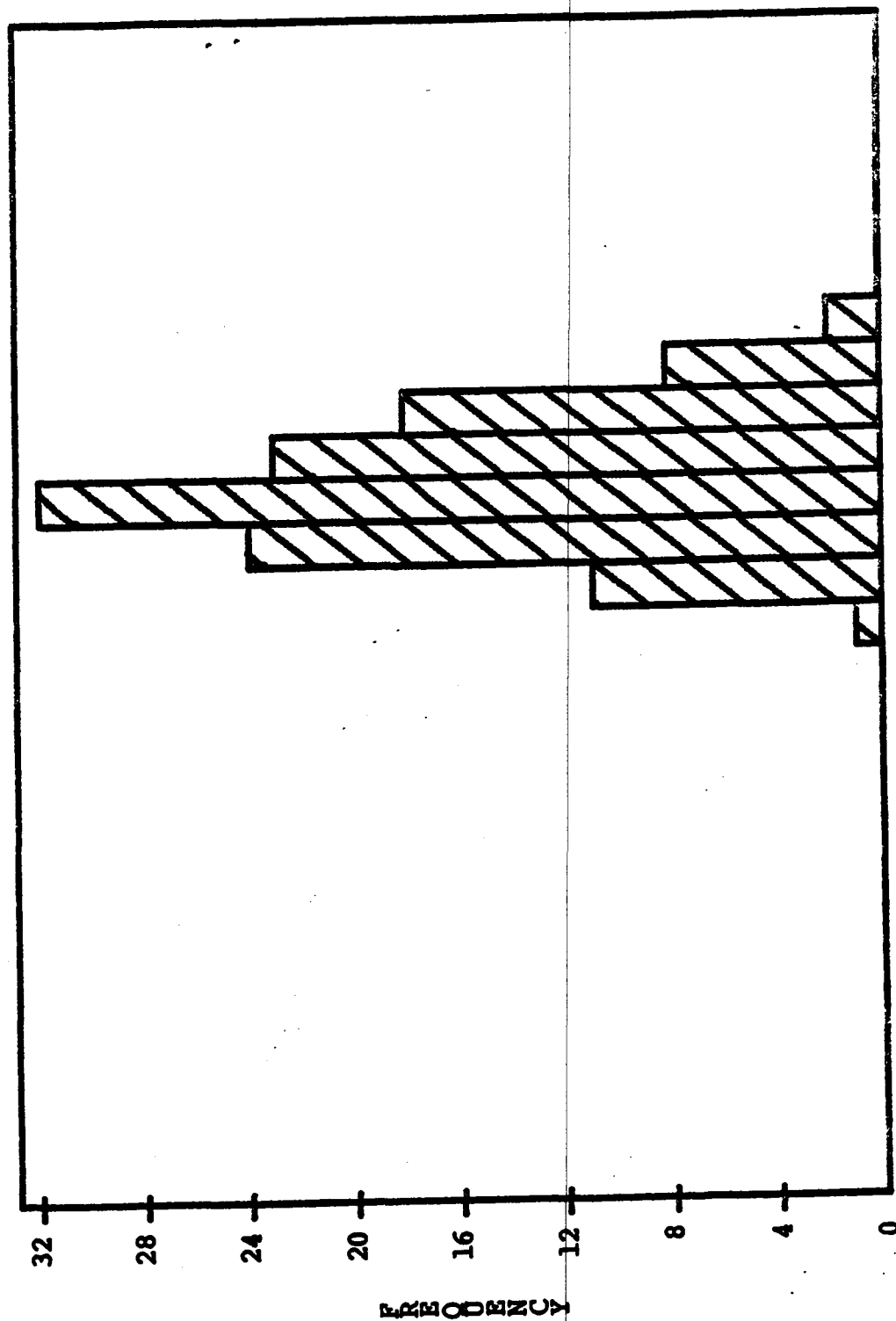
36	0	36	5	37	0	37	5	38	0	38	5	38	0	38	5	39	0	39	5	40	0	40	5	41	0	41	5	42	0	42	5	43	0	43	5	44	0	44	5	45	0	45	5	46	0	46	5	47	0	47	5	48	0	49	5	50	0	51	5	52	0	53	5	54	0	55	5	56	0	57	5	58	0	59	5	60	0	61	5	62	0	63	5	64	0	65	5	66	0	67	5	68	0	69	5	70	0	71	5	72	0	73	5	74	0	75	5	76	0	77	5	78	0	79	5	80	0	81	5	82	0	83	5	84	0	85	5	86	0	87	5	88	0	89	5	90	0	91	5	92	0	93	5	94	0	95	5	96	0	97	5	98	0	99	5	100	0
----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	-----	---

SIZE CLASS

1984-- BOX 513 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=119



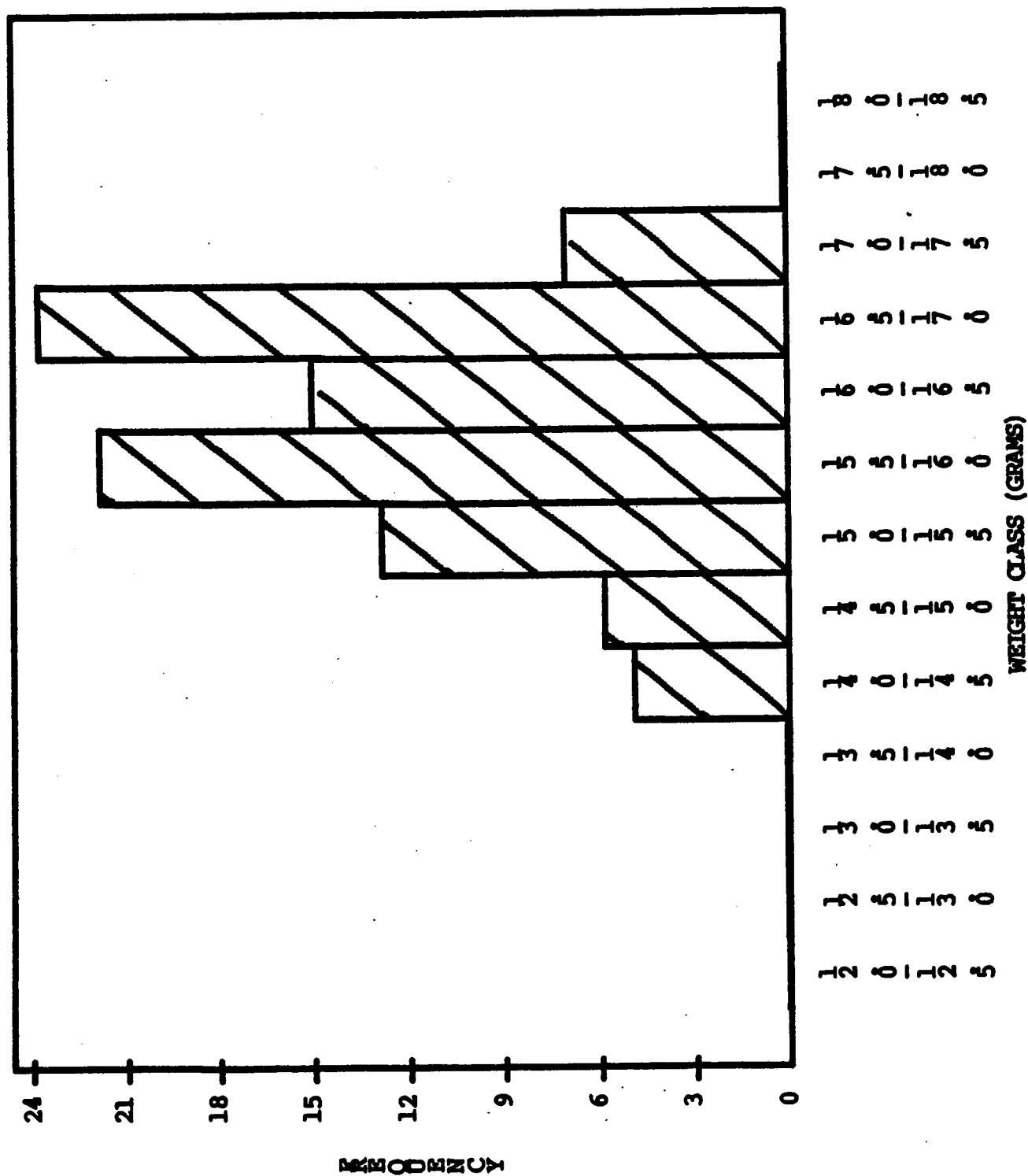
1984- BOX 513 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=119



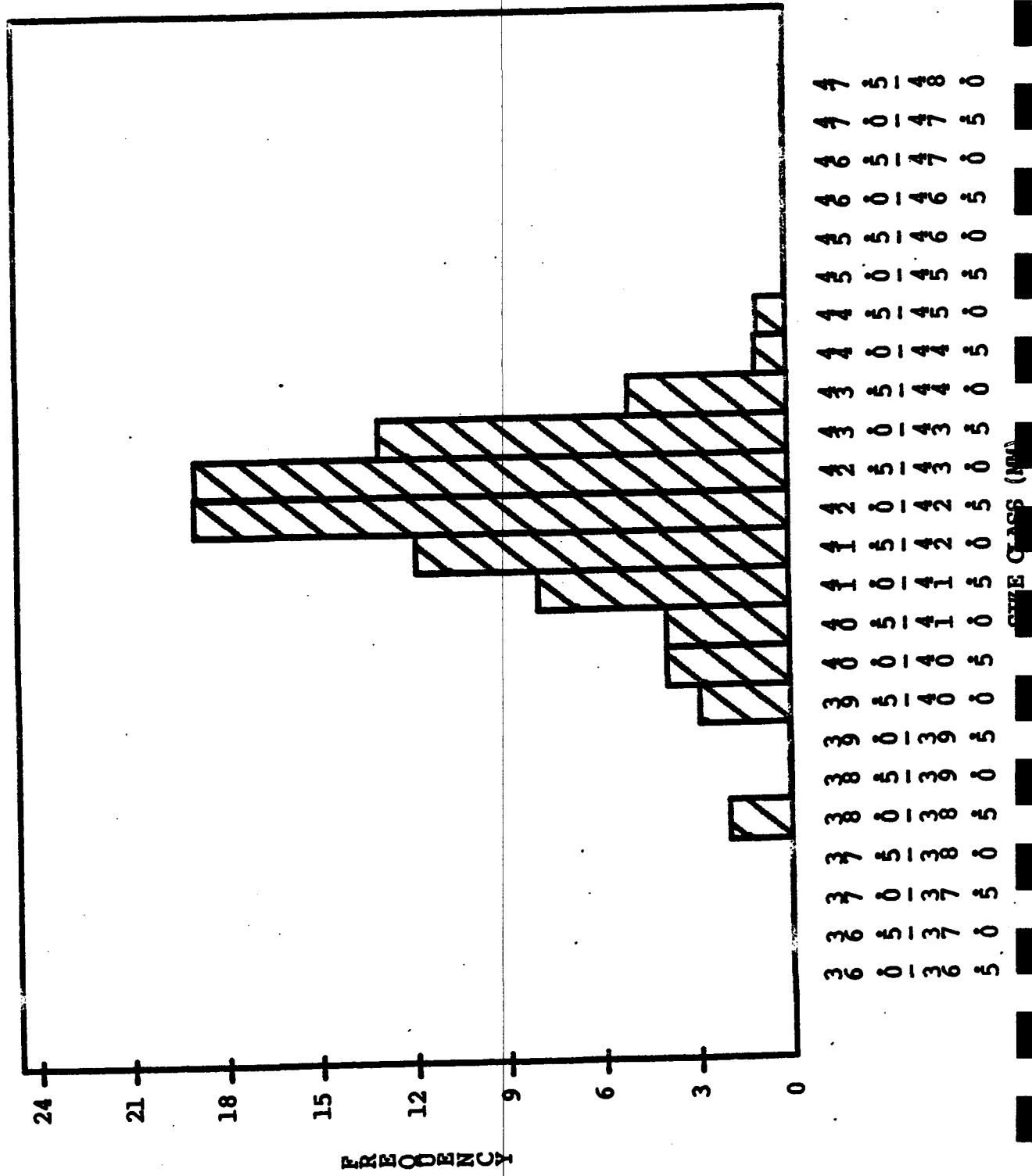
36 0-36 5
36 5-37 0
37 0-37 5
37 5-38 0
38 0-38 5
38 5-39 0
39 0-39 5
39 5-40 0
40 0-40 5
40 5-41 0
41 0-41 5
41 5-42 0
42 0-42 5
42 5-43 0
43 0-43 5
43 5-44 0
44 0-44 5
44 5-45 0
45 0-45 5
45 5-46 0
46 0-46 5
46 5-47 0
47 0-47 5
47 5-48 0
48 0-48 5
48 5-49 0

SIZE CLASS (MM)

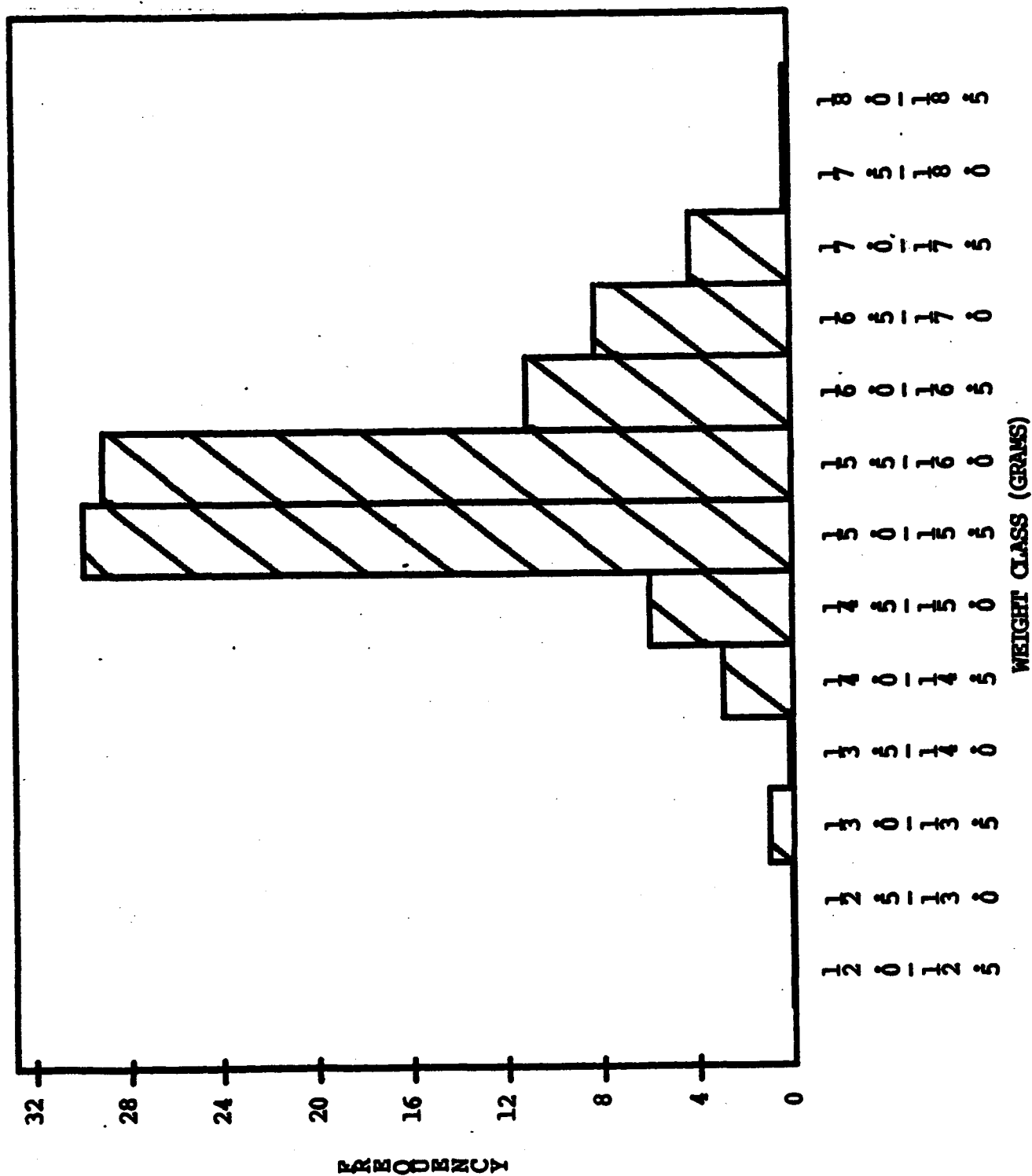
1984- BOX 514 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM ID= 92



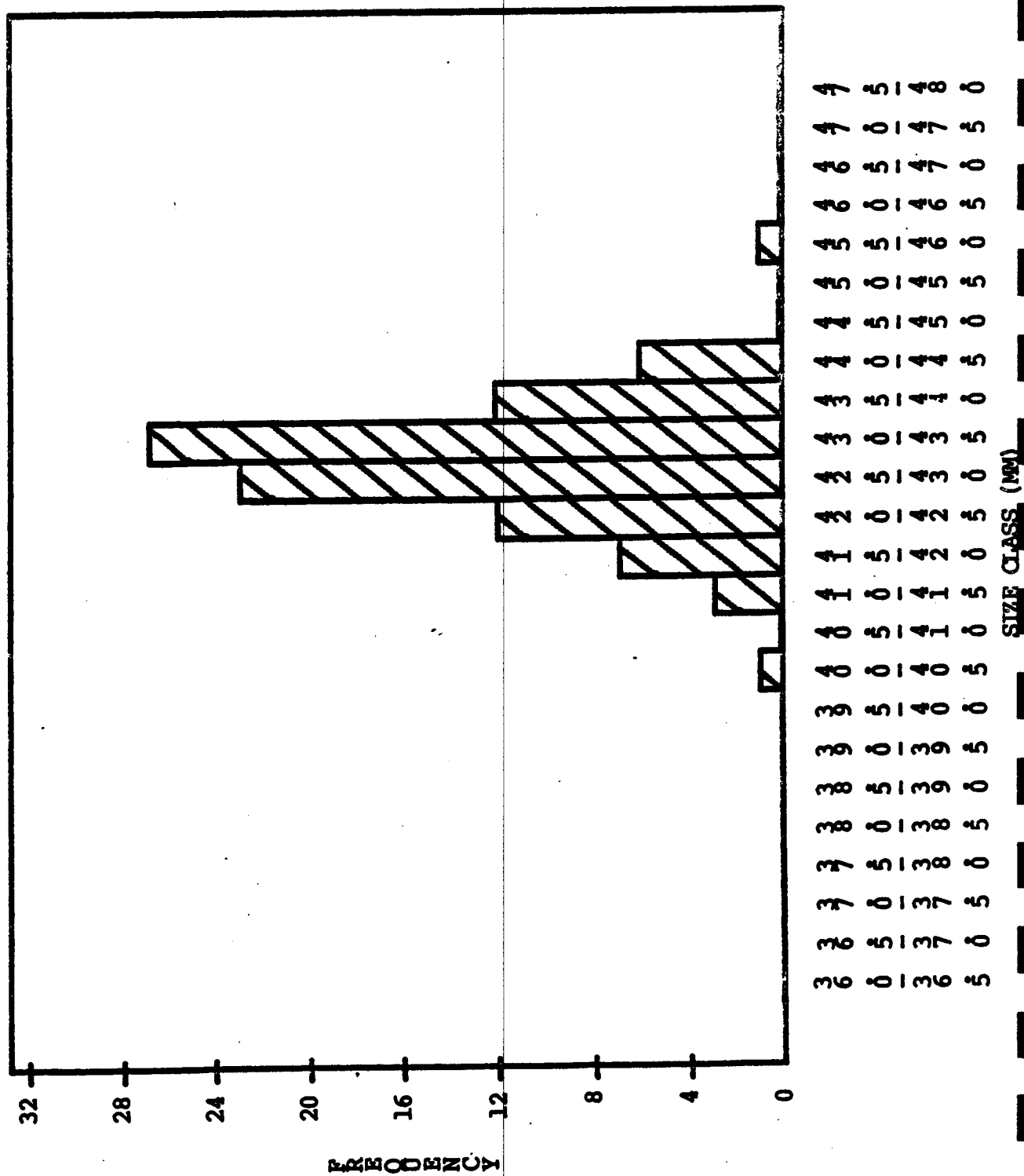
1984-- BOX 514 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 92



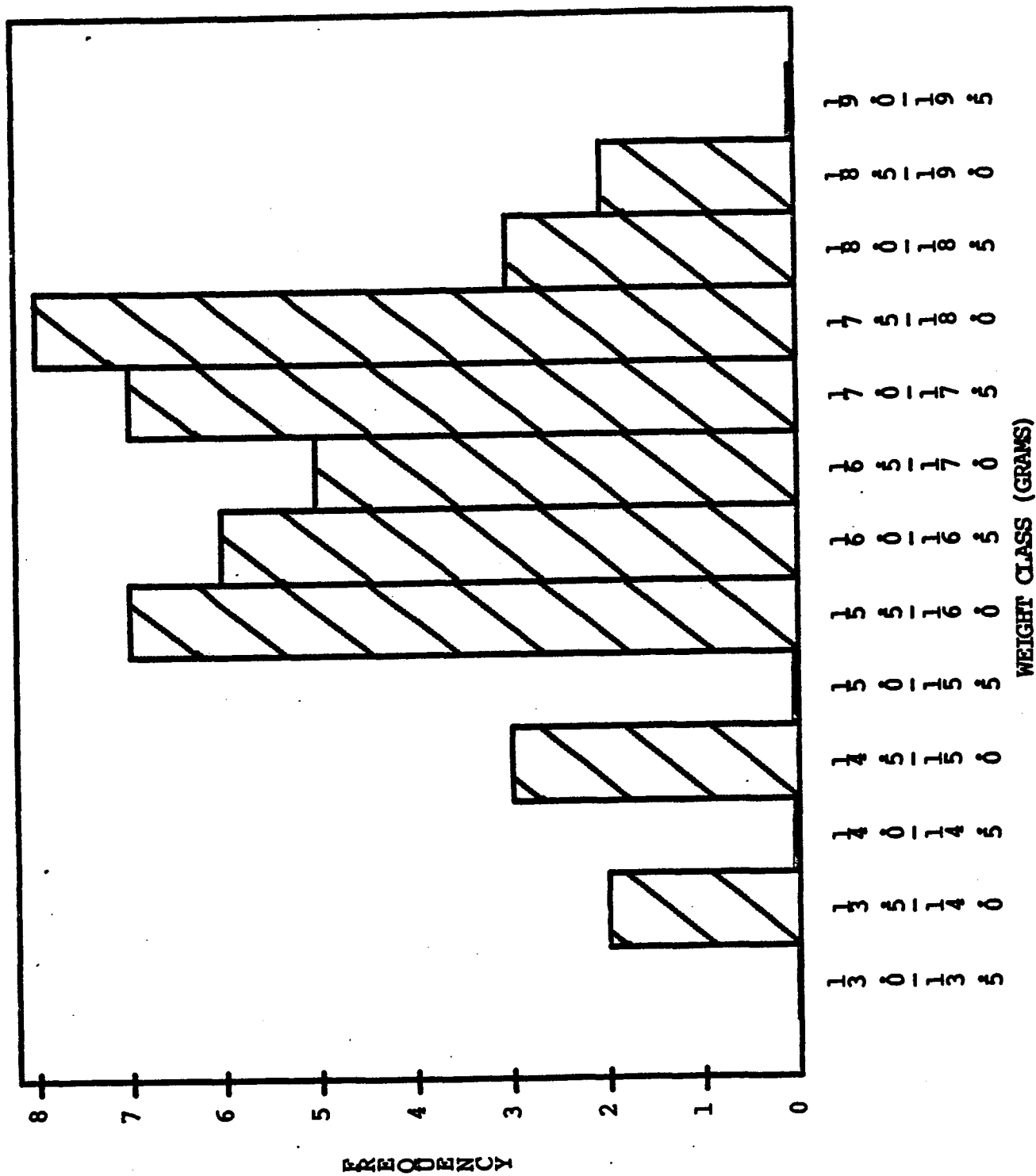
1984-- BOX 515 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n= 93



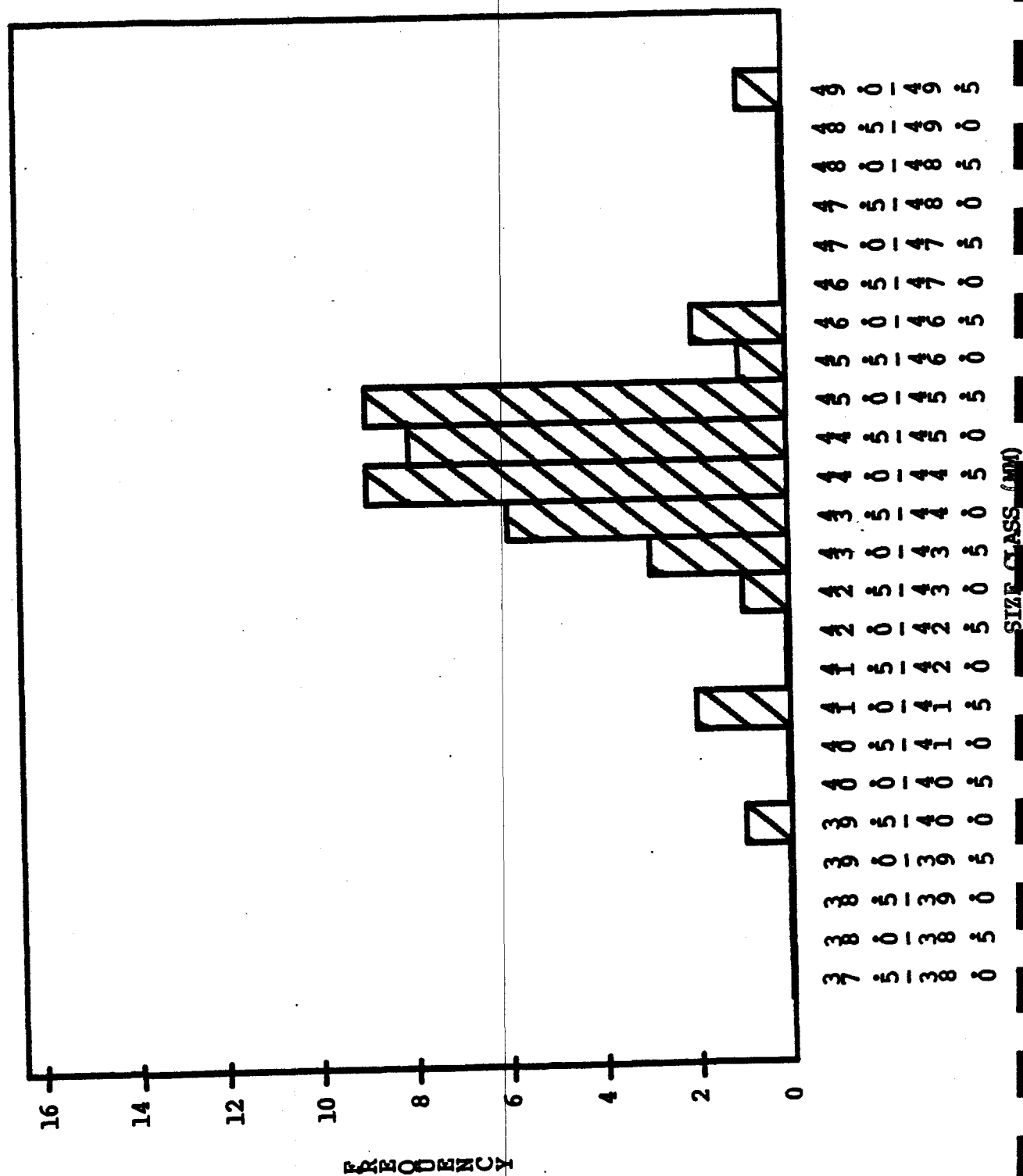
1984- BOX 515 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 93



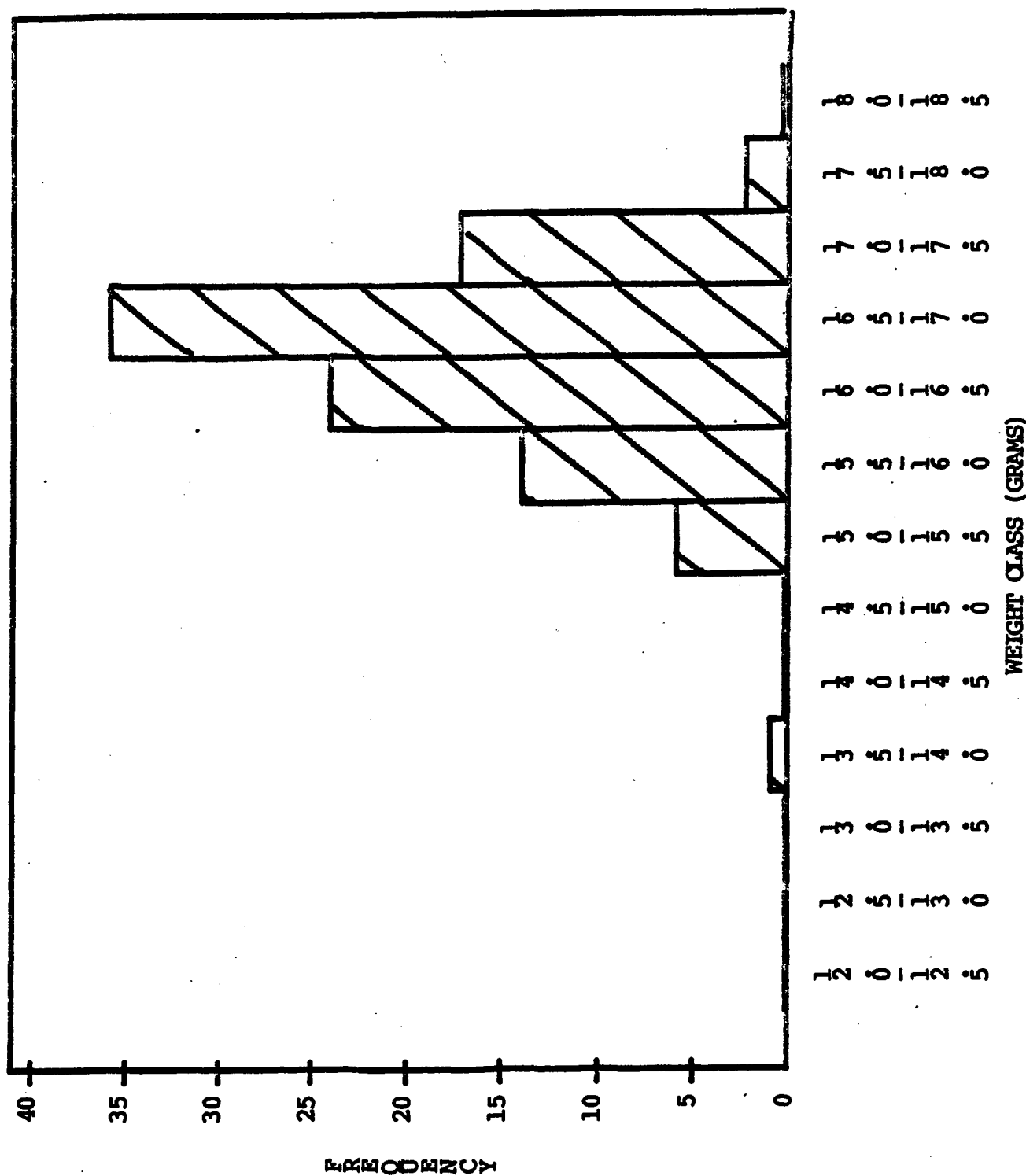
1984- BOX 765 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM IF= 43



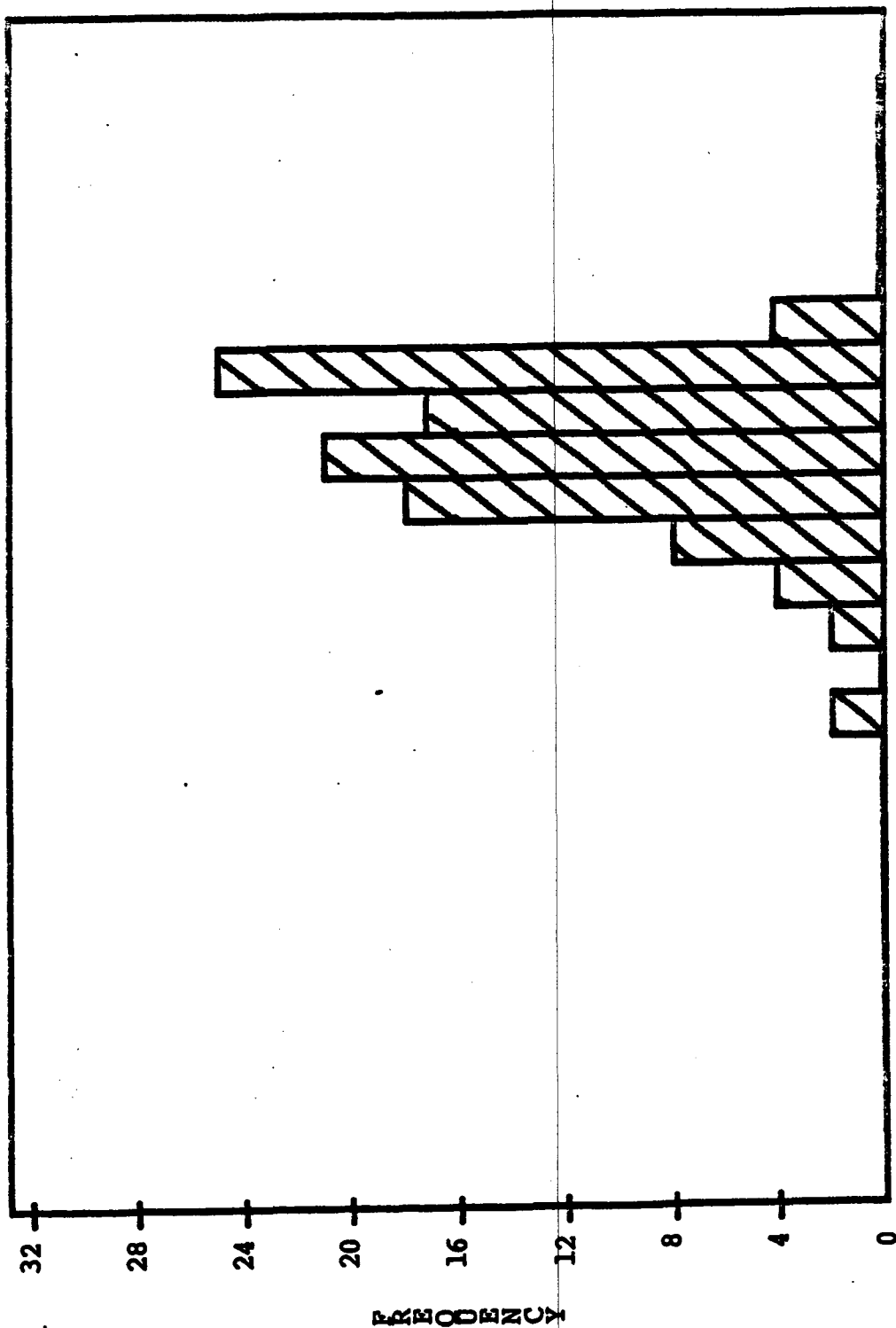
1984-- BOX 765 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 43



1984- BOX 766 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM N=101



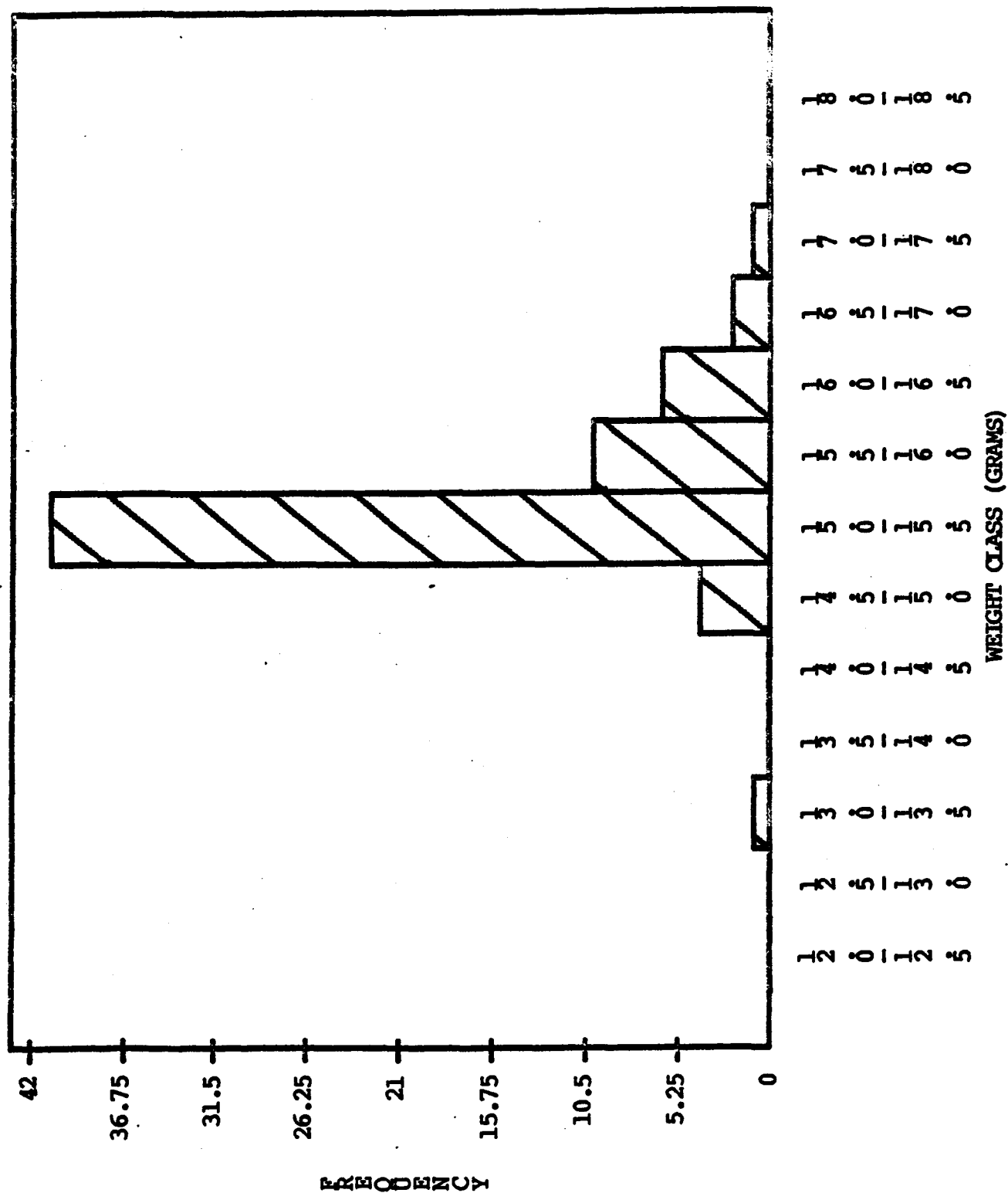
1984-- BOX 766 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=101



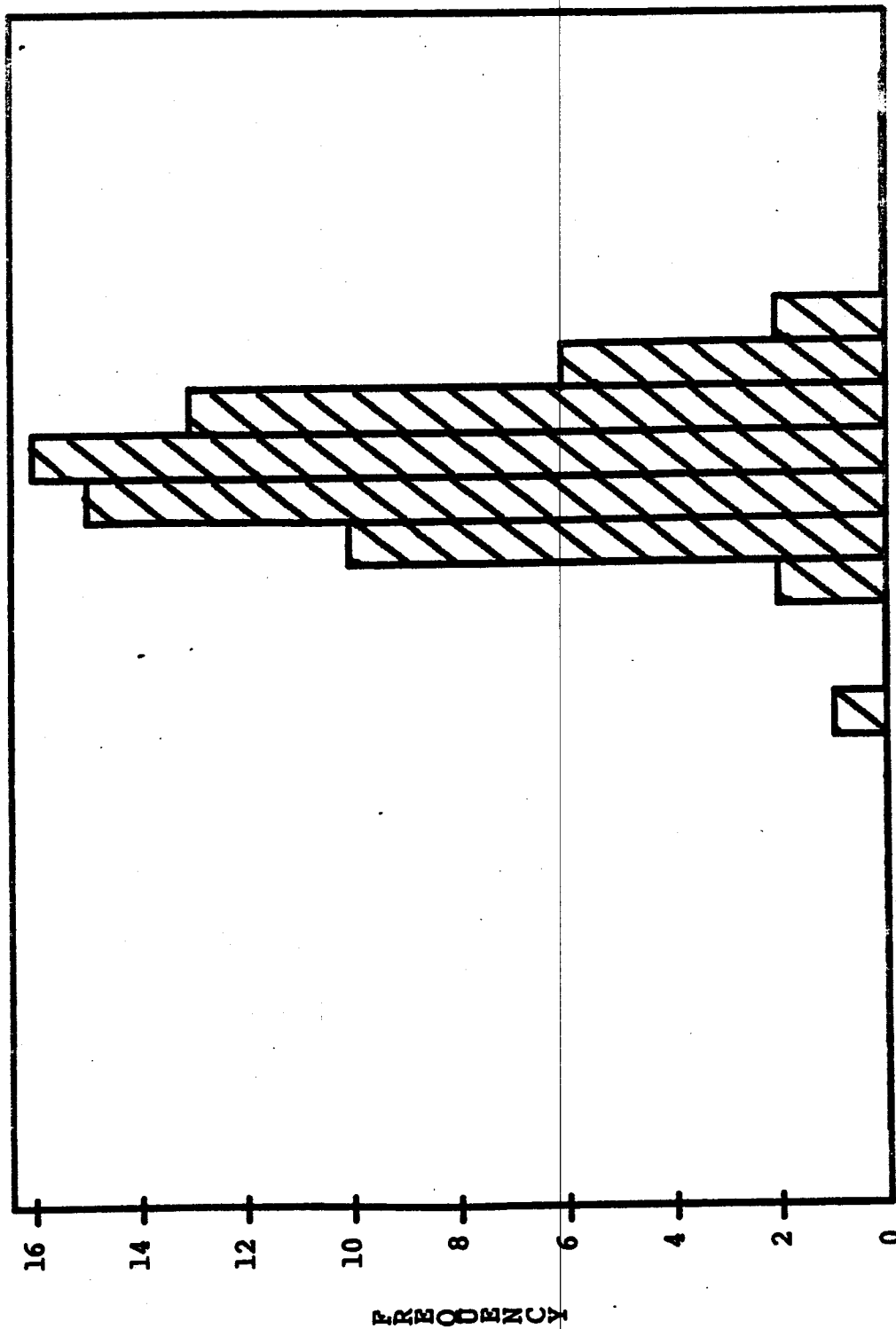
36 0-36 5
36 5-37 0
37 0-37 5
37 5-38 0
38 0-38 5
38 5-39 0
39 0-39 5
39 5-40 0
40 0-40 5
40 5-41 0
41 0-41 5
41 5-42 0
42 0-42 5
42 5-43 0
43 0-43 5
43 5-44 0
44 0-44 5
44 5-45 0
45 0-45 5
45 5-46 0
46 0-46 5
46 5-47 0
47 0-47 5
47 5-48 0
48 0

SIZE CLASS (mm)

1984- BOX 767 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM $n = 65$

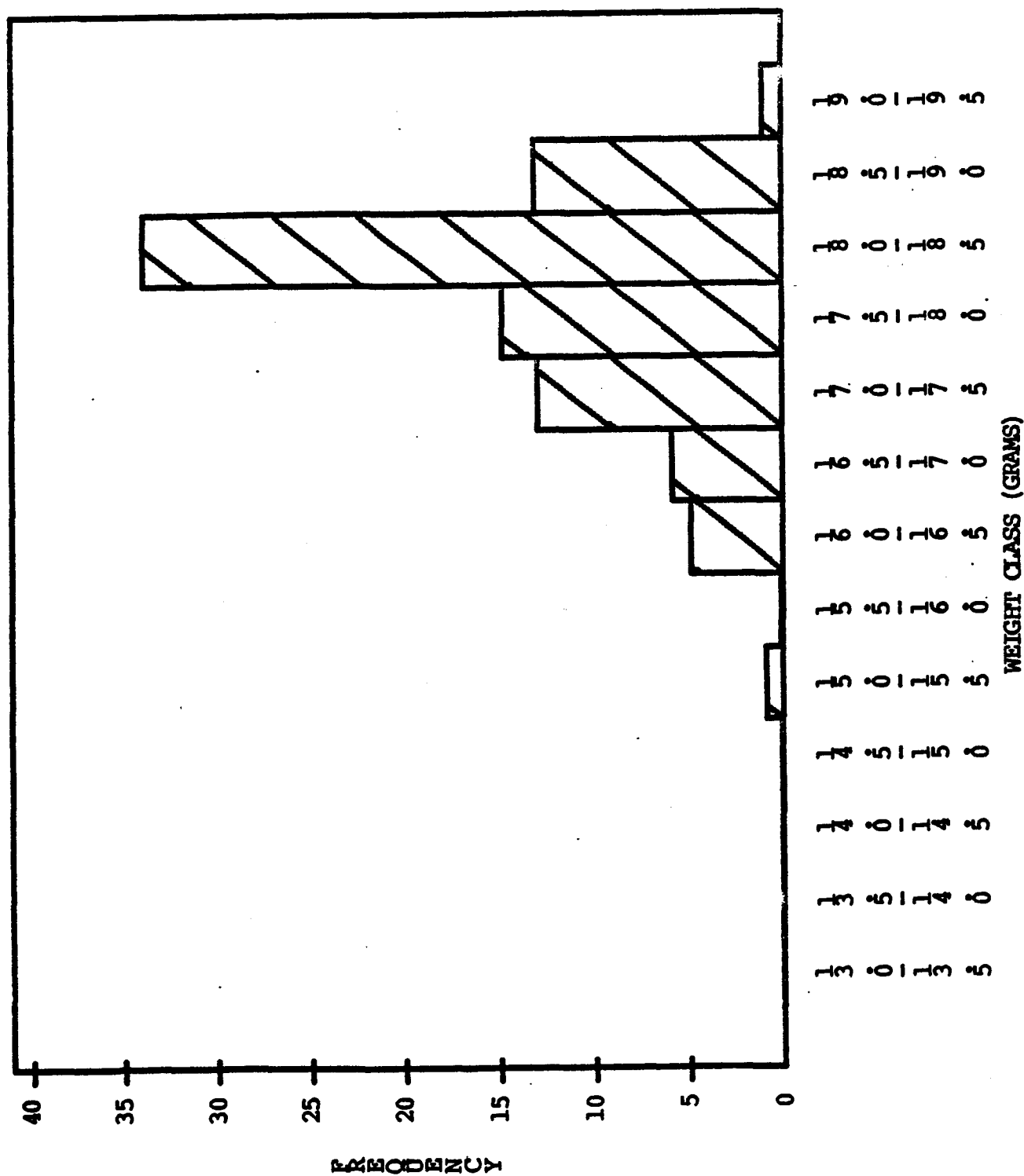


1984-- BOX 767 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 65

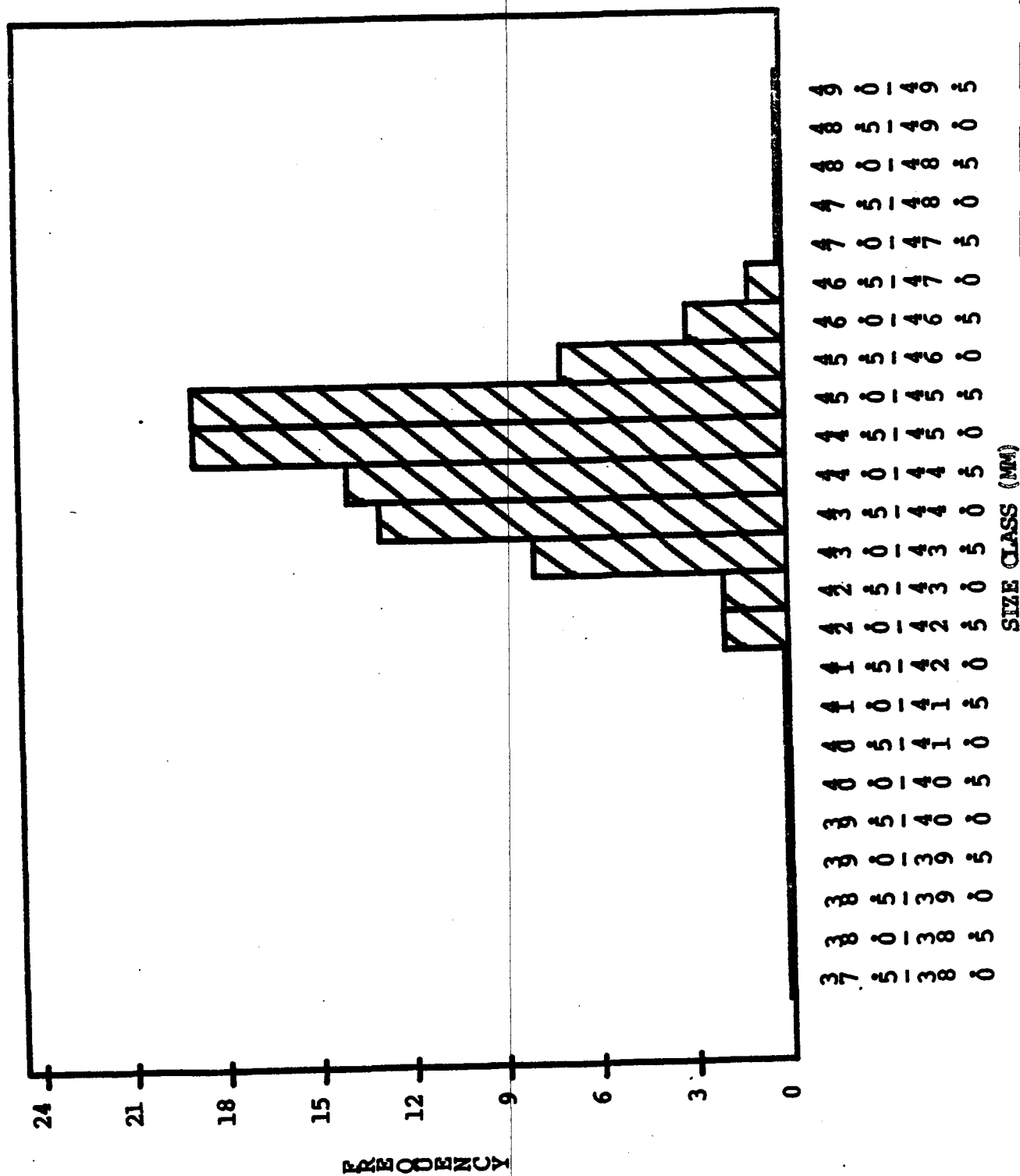


36 0-36 5
36 5-37 0
37 0-37 5
37 5-38 0
38 0-38 5
38 5-39 0
39 0-39 5
39 5-40 0
40 0-40 5
40 5-41 0
41 0-41 5
41 5-42 0
42 0-42 5
42 5-43 0
43 0-43 5
43 5-44 0
44 0-44 5
44 5-45 0
45 0-45 5
45 5-46 0
46 0-46 5
46 5-47 0
47 0-47 5
47 5-48 0
48 0-48 5

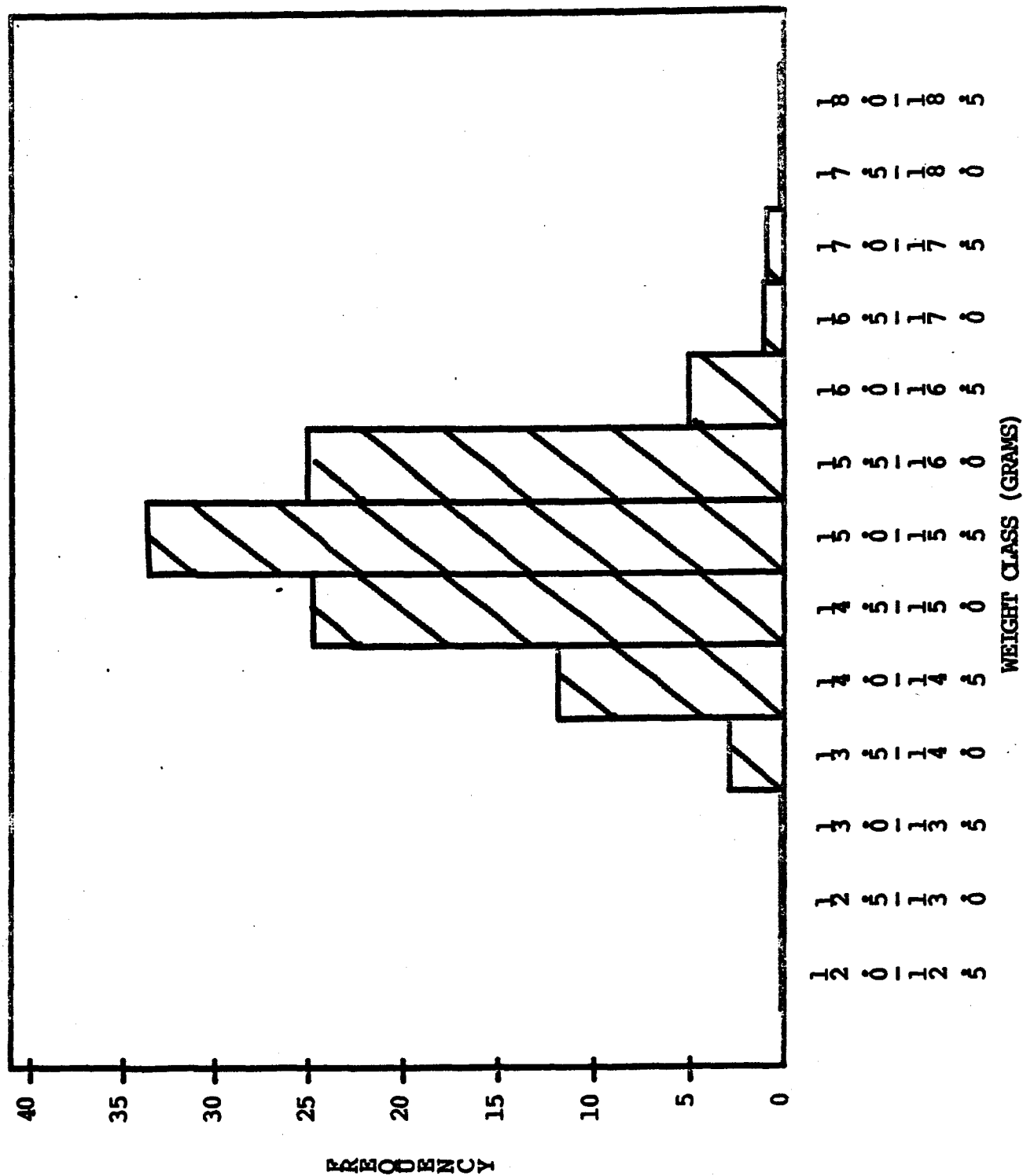
1984- BOX 768 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n= 88



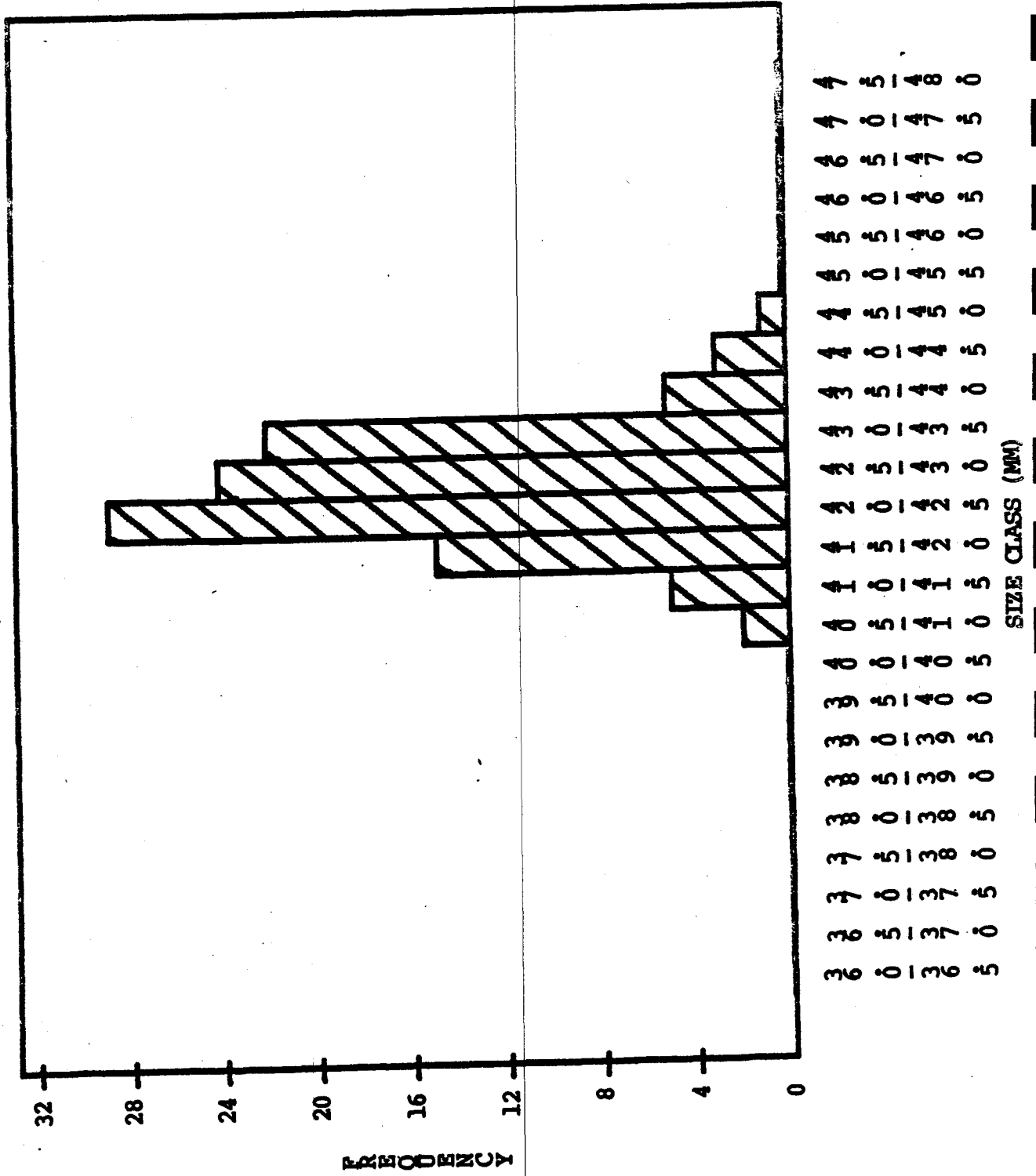
1984- BOX 768 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 88



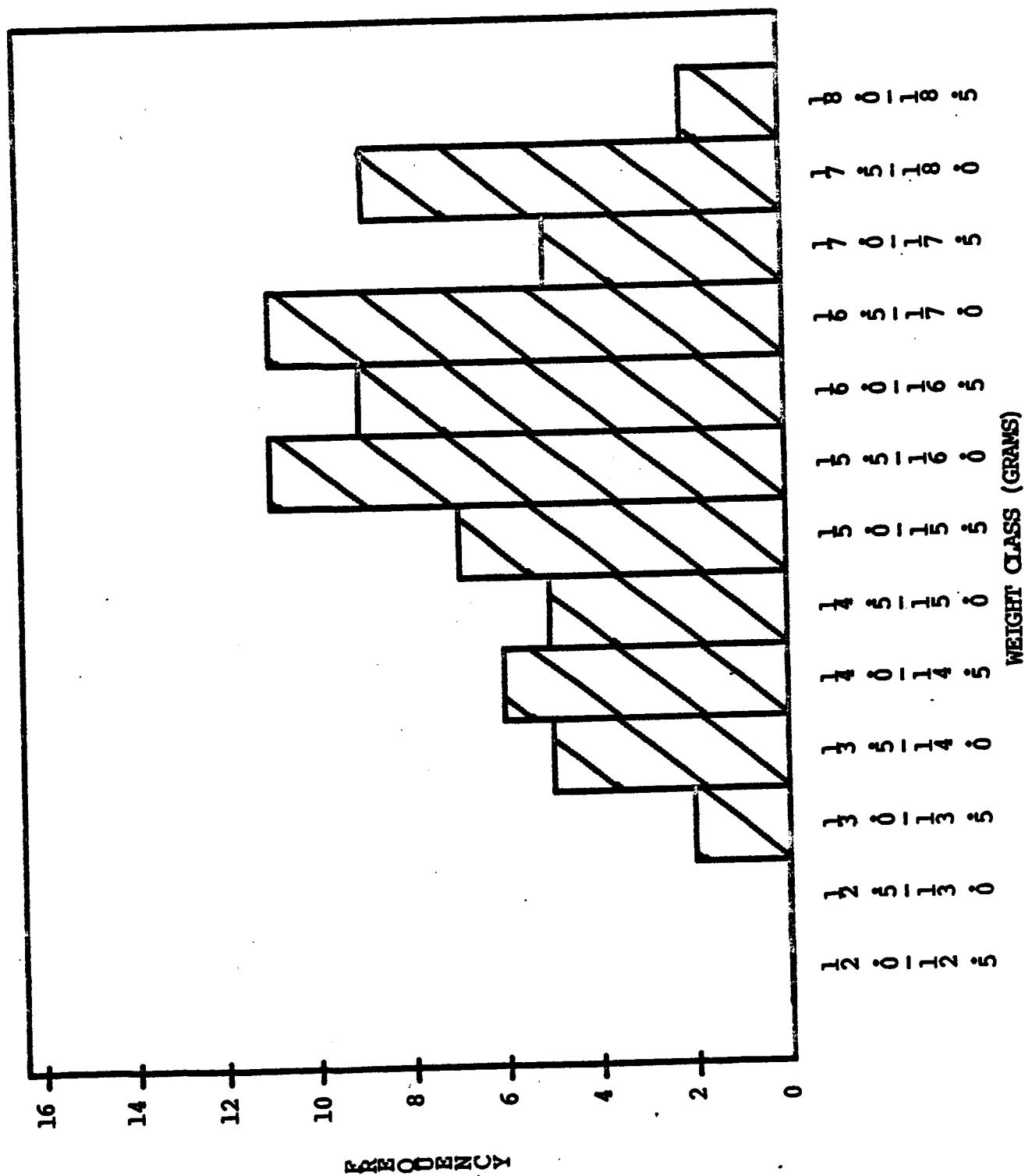
1984- BOX 769 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=106



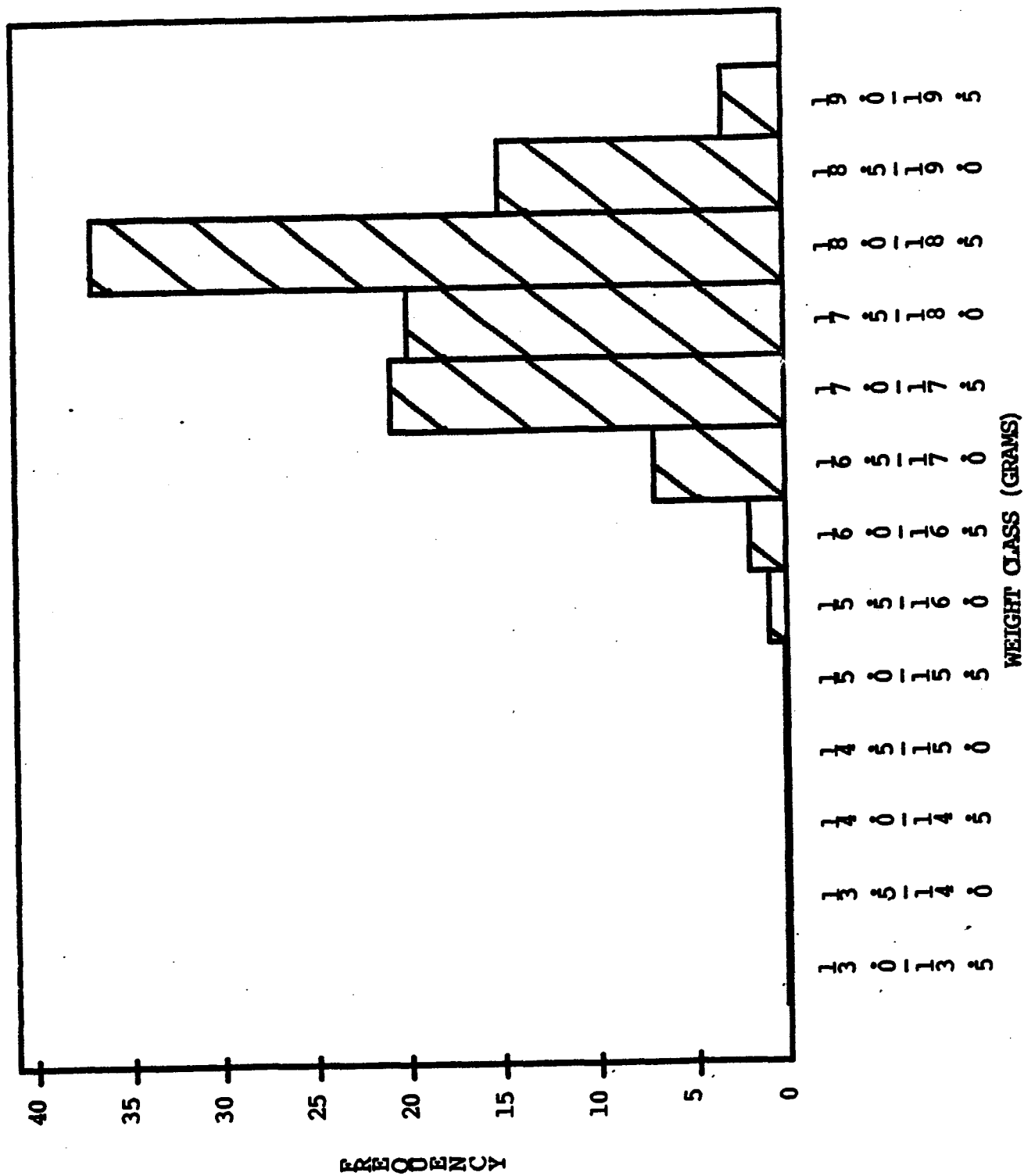
1984- BOX 769 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=106



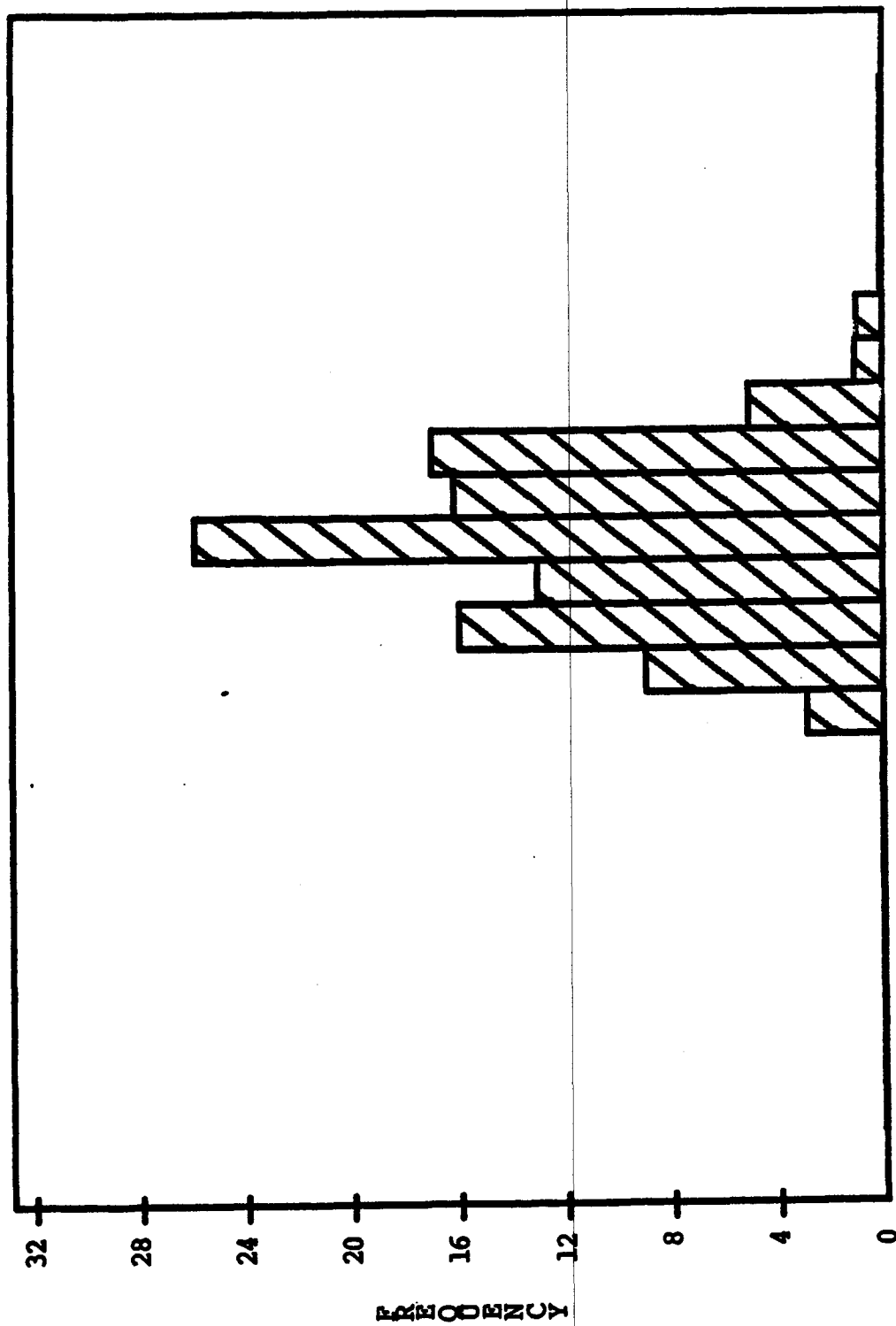
1984-- BOX 770 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n= 72



1984- BOX 771 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=107



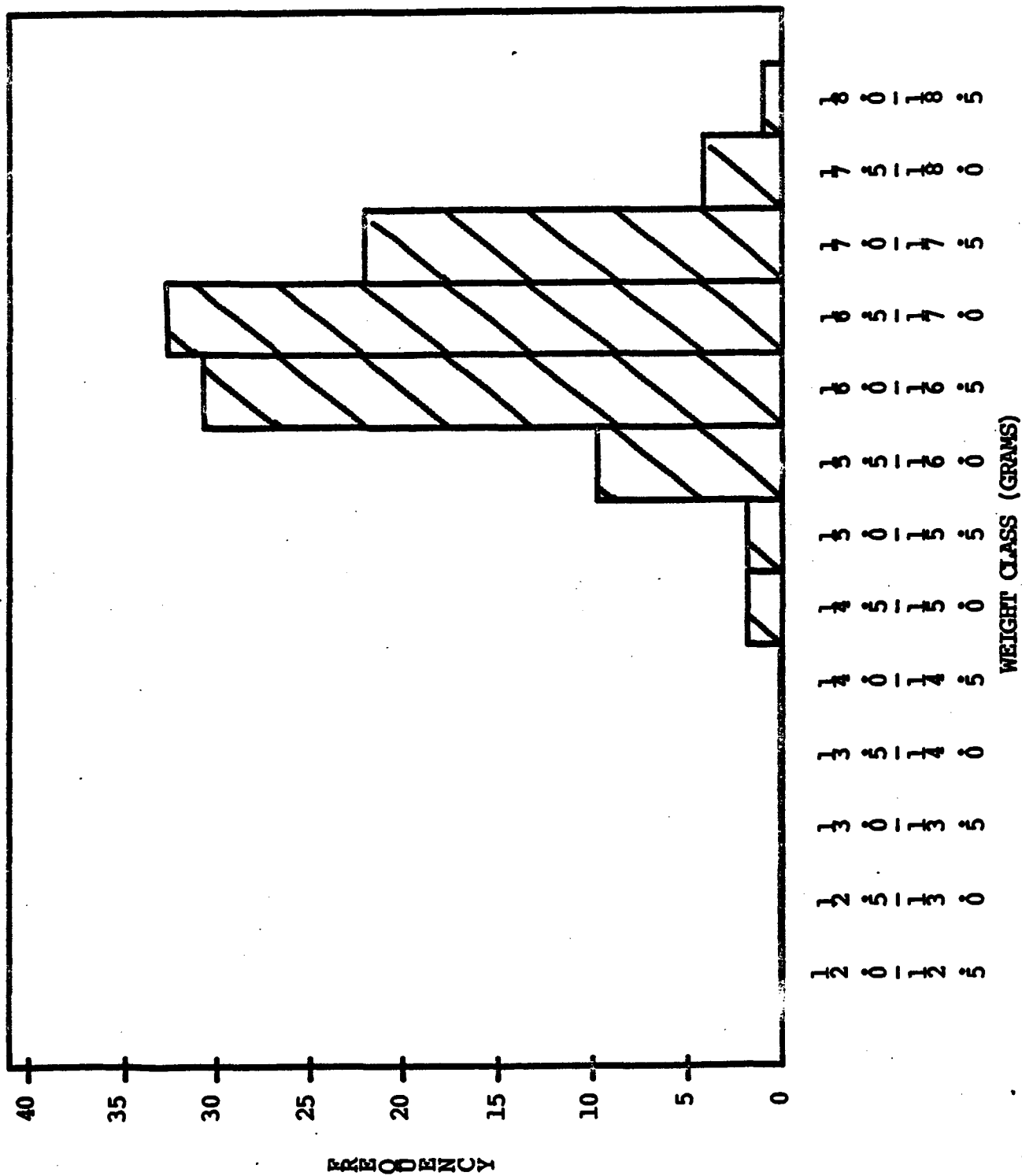
1984-- BOX 771 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=107



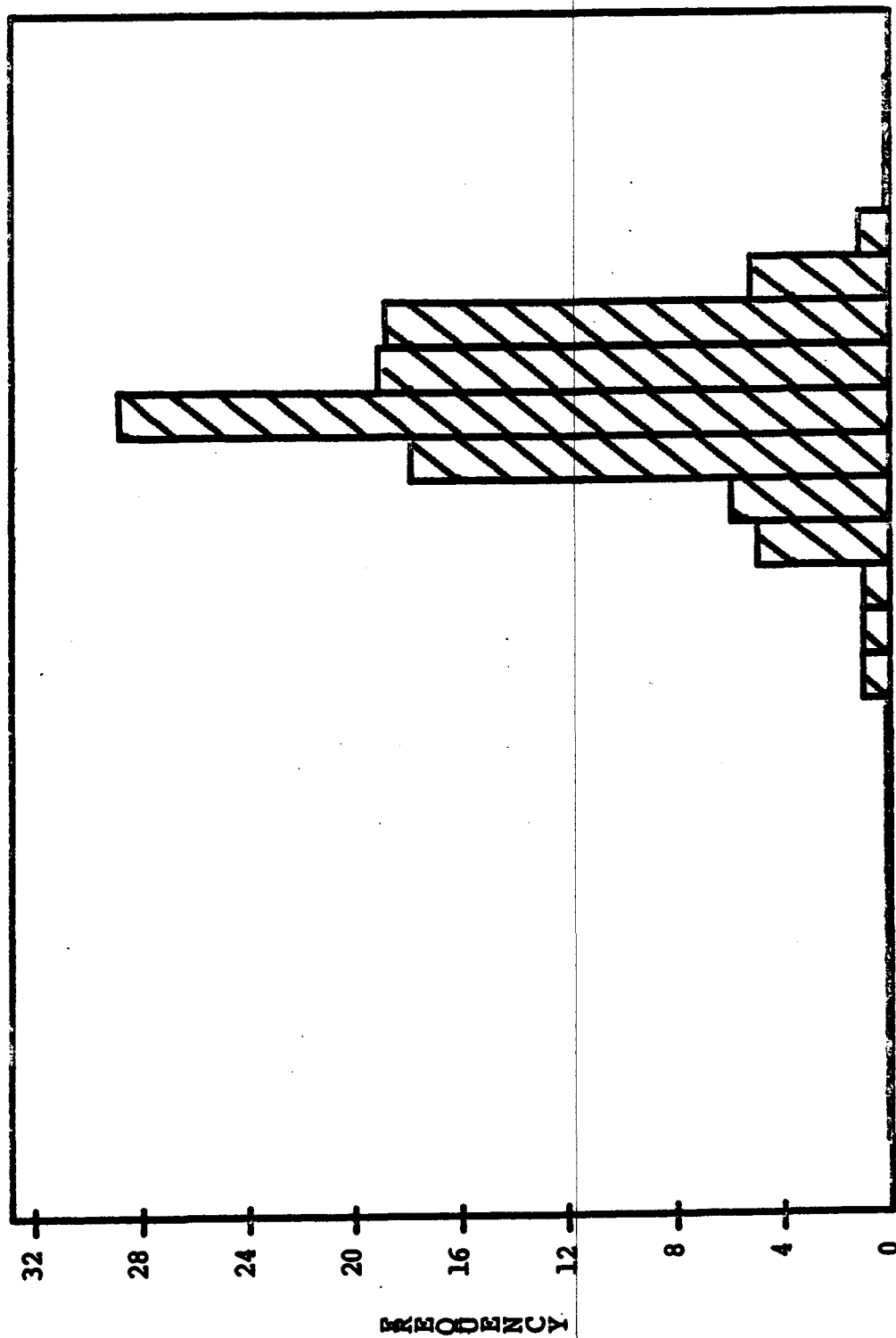
37 5-38 0
38 0-38 5
38 5-39 0
39 0-39 5
39 5-40 0
40 0-40 5
40 5-41 0
41 0-41 5
41 5-42 0
42 0-42 5
42 5-43 0
43 0-43 5
43 5-44 0
44 0-44 5
44 5-45 0
45 0-45 5
45 5-46 0
46 0-46 5
46 5-47 0
47 0-47 5
47 5-48 0
48 0-48 5
48 5-49 0
49 0-49 5
49 5-50 0

SIZE CLASS (MM)

1984- BOX 772 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=105

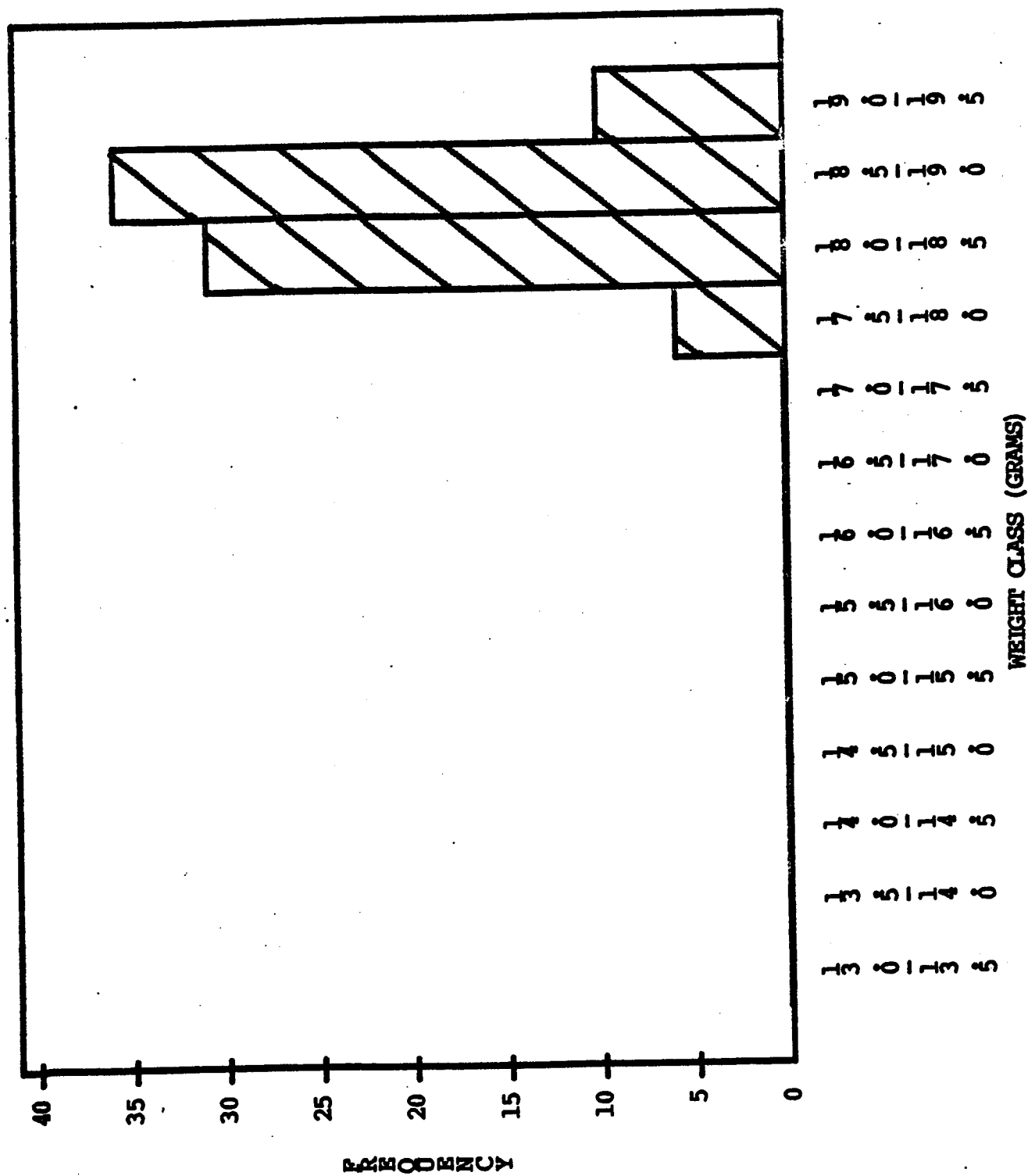


1984- BOX 772 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=105

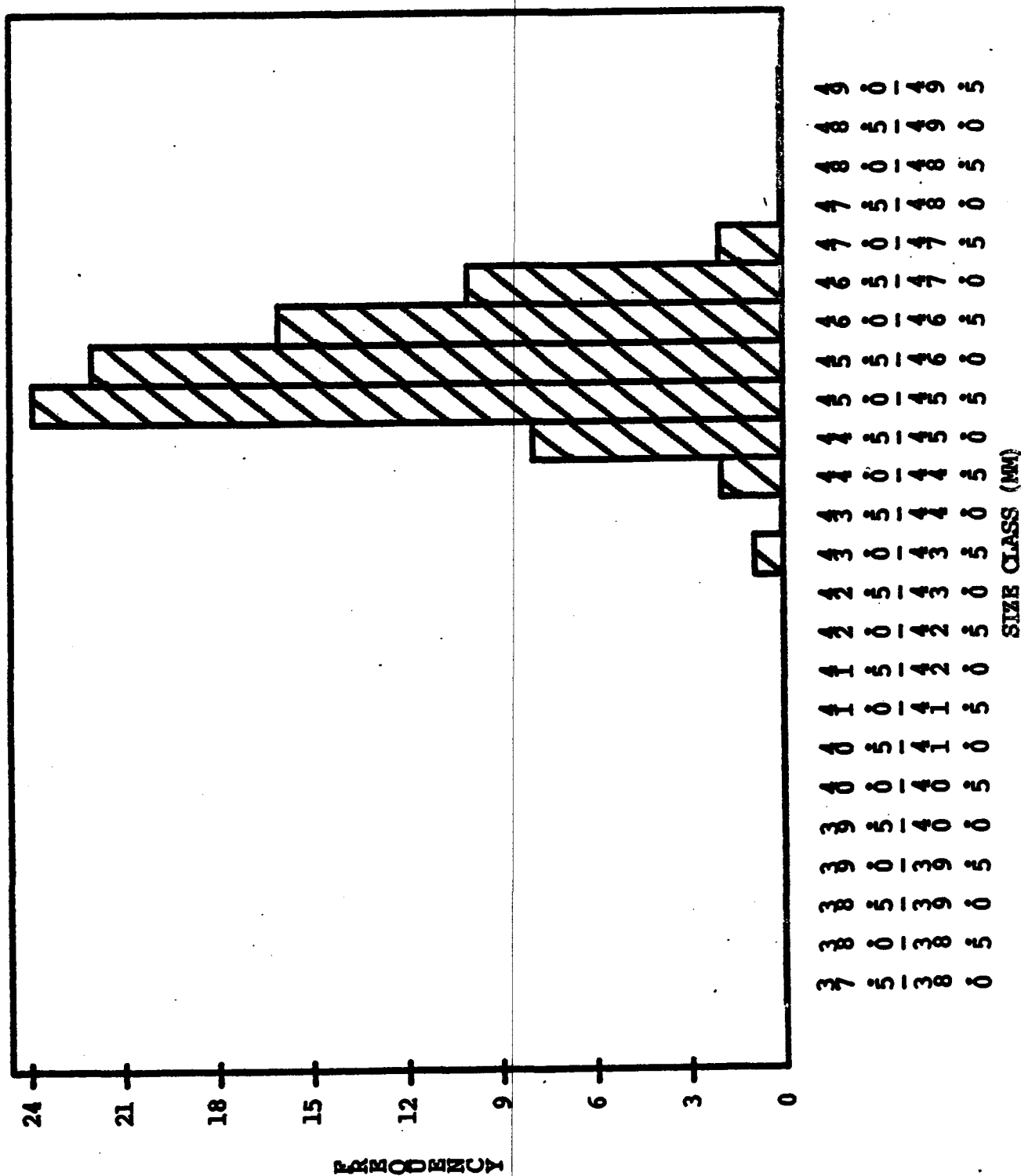


36 0-36 5 0-37 7 5 0-38 8 0-39 3 5 0-40 3 5 0-41 1 5 0-42 1 5 0-43 2 5 0-44 2 5 0-45 3 5 0-46 3 5 0-47 4 5 0-48 5 5 0-49 6 5 0-50 6 5 0-51 6 5 0-52 7 5 0-53 7 5 0-54 8 5 0

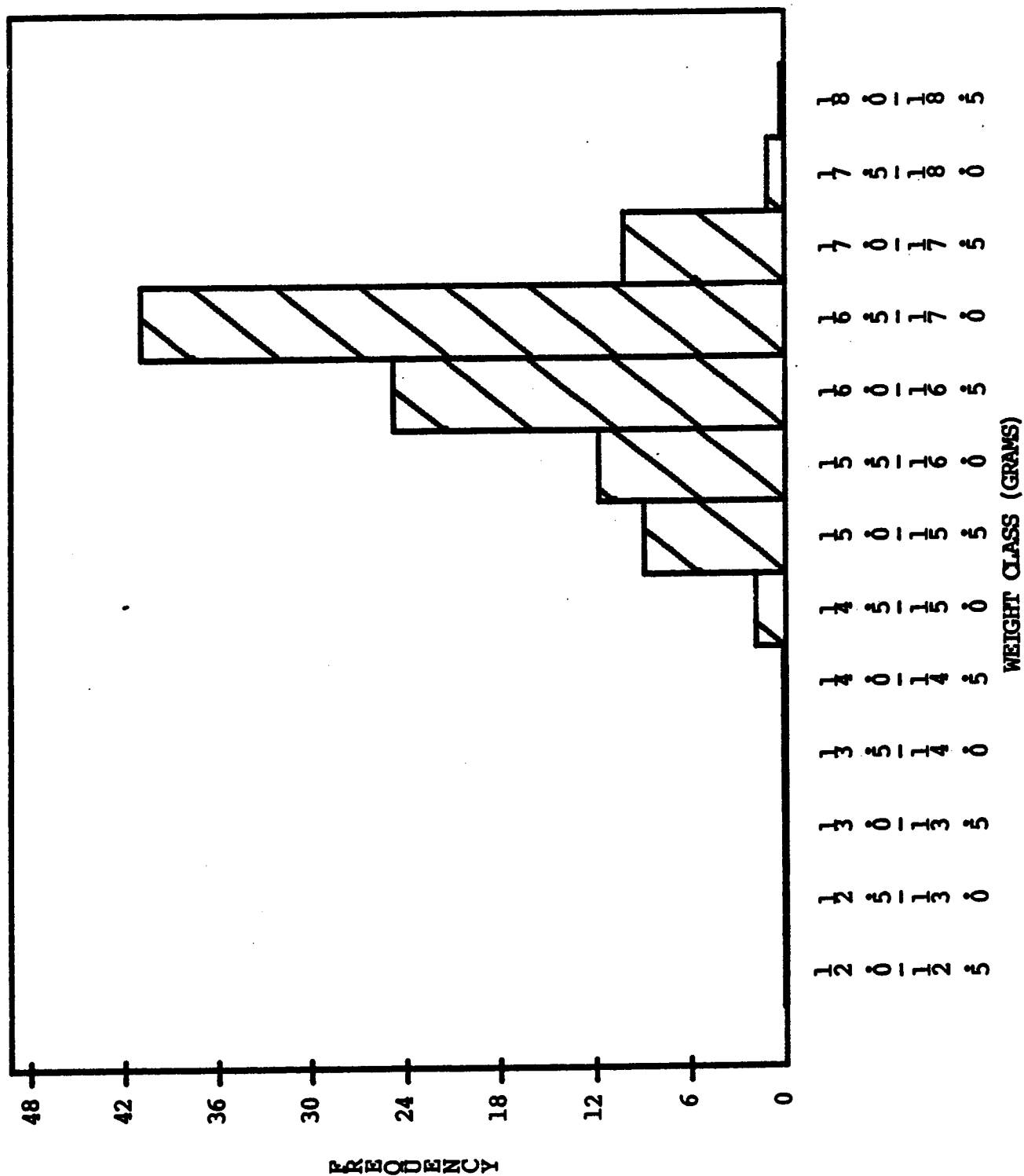
1984-- BOX 773 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n= 85



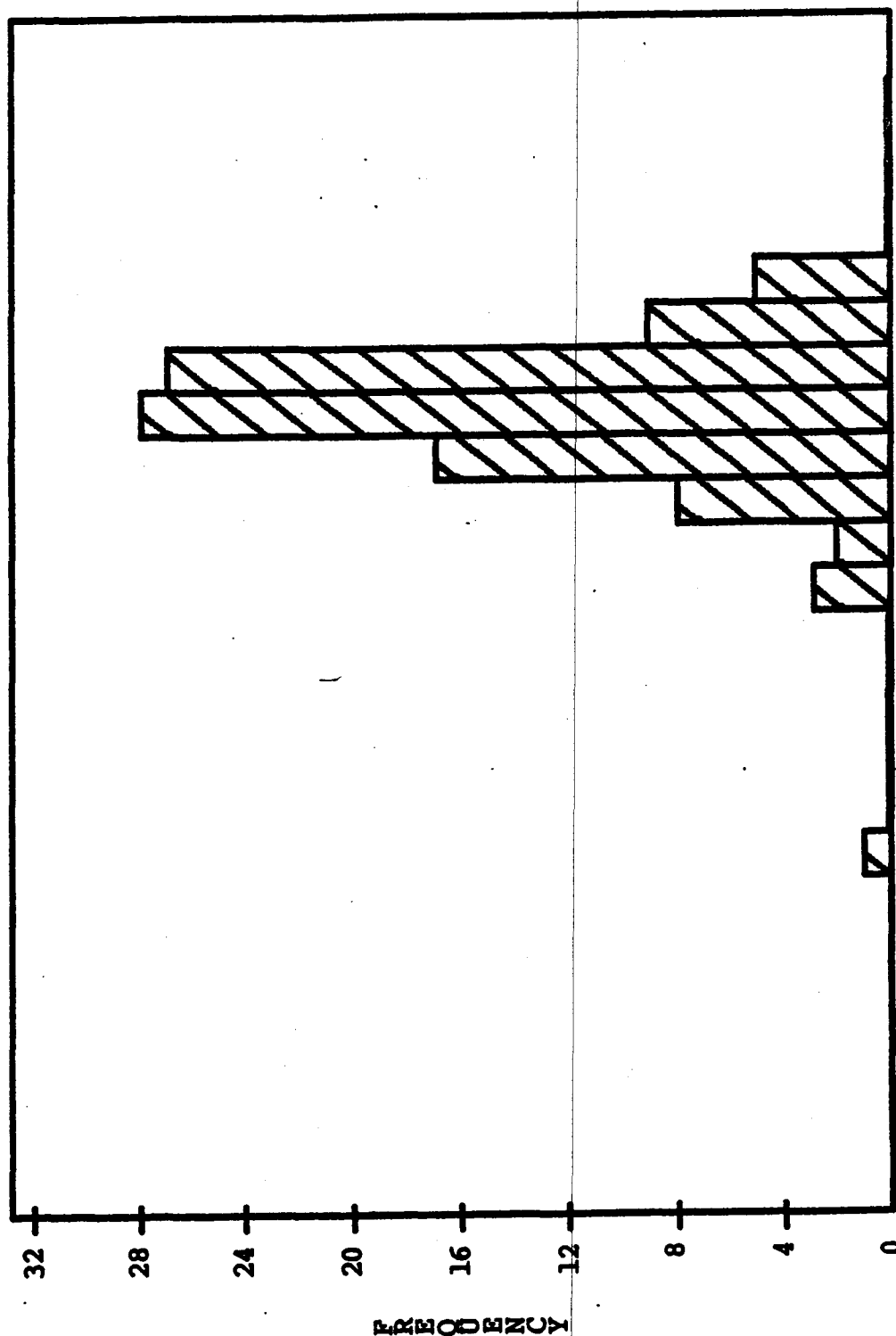
1984- BOX 773 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 85



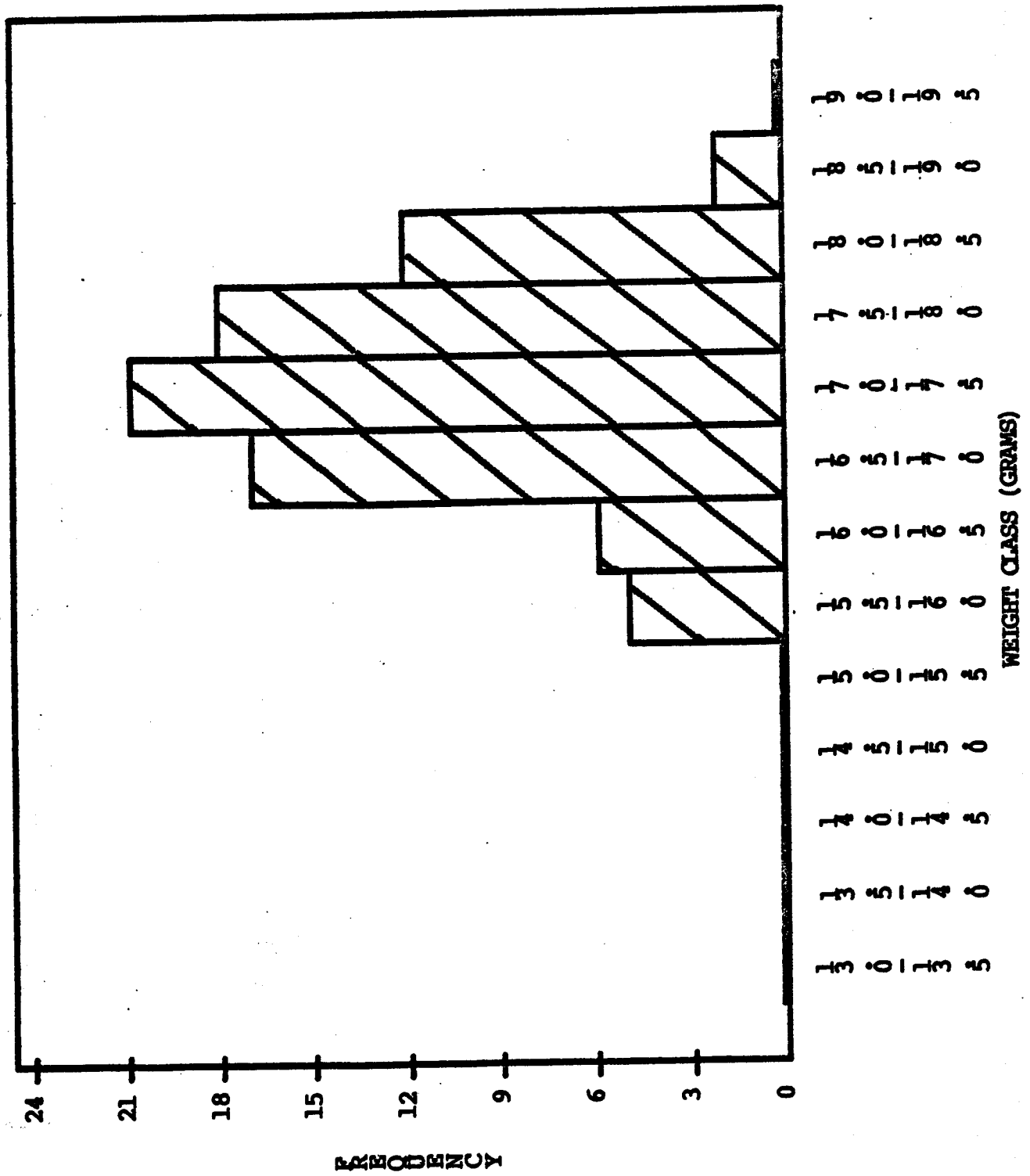
1984- BOX 774 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=100



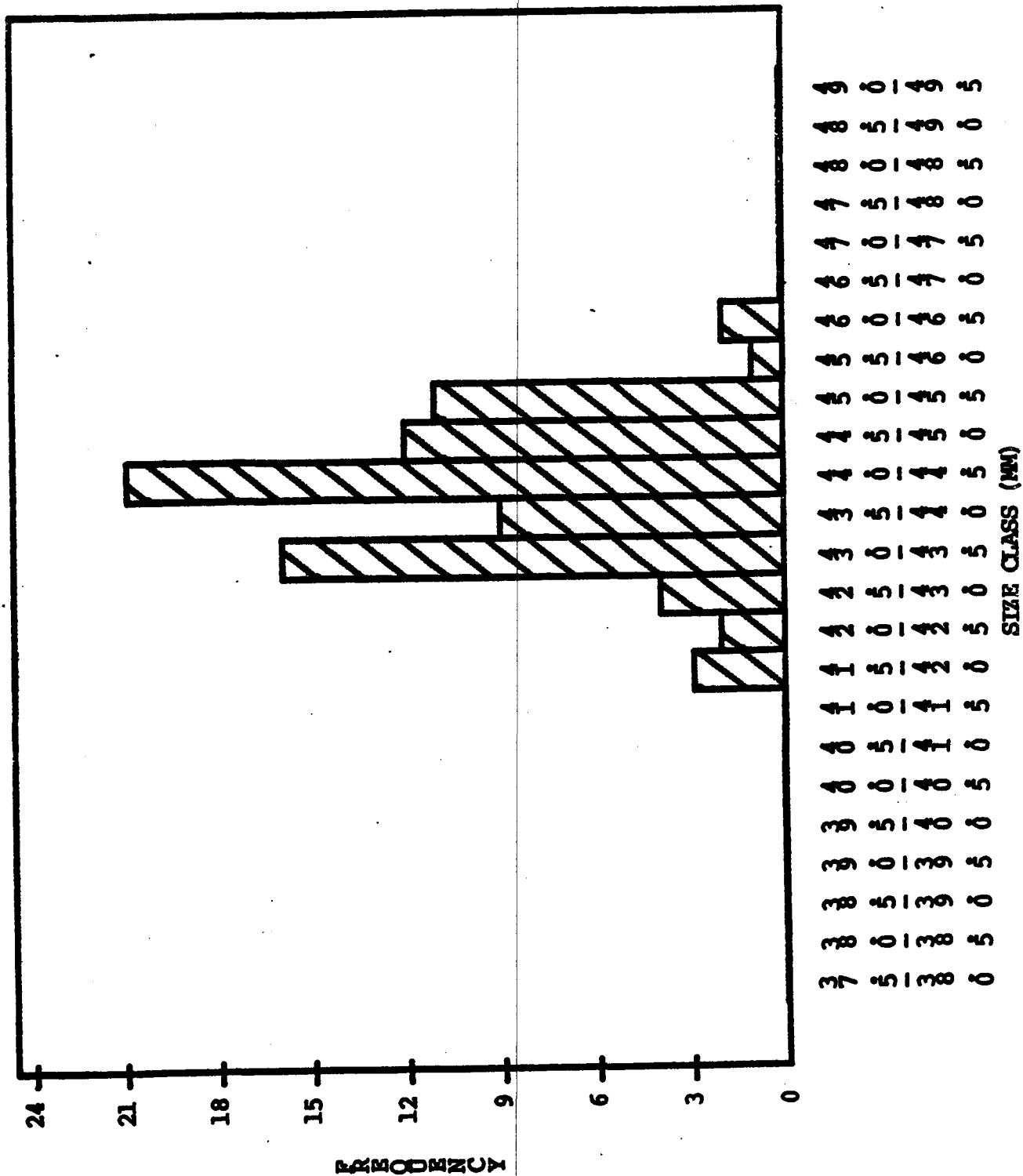
1984- BOX 774 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=100



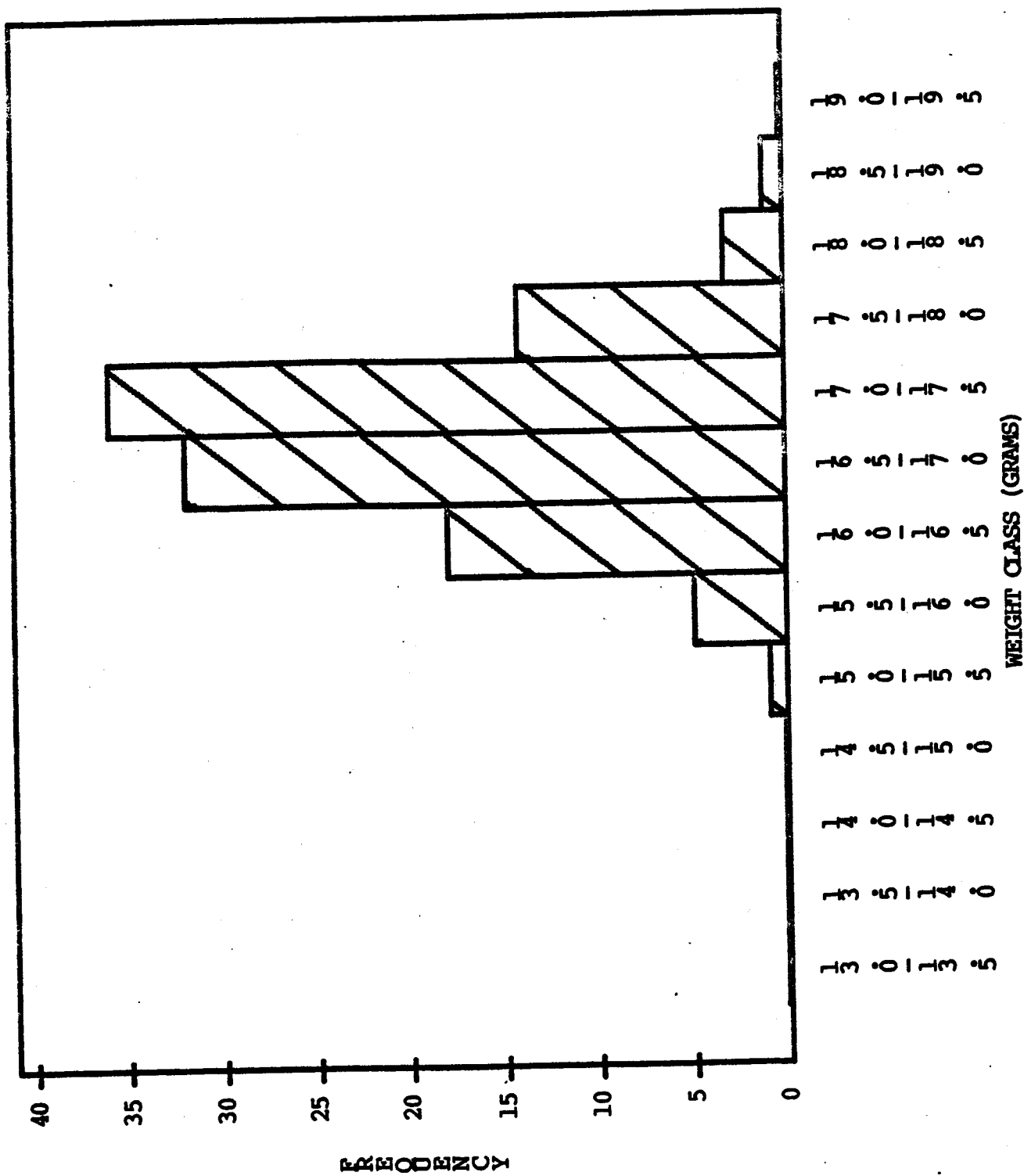
1984-- BOX 775 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM N= 81



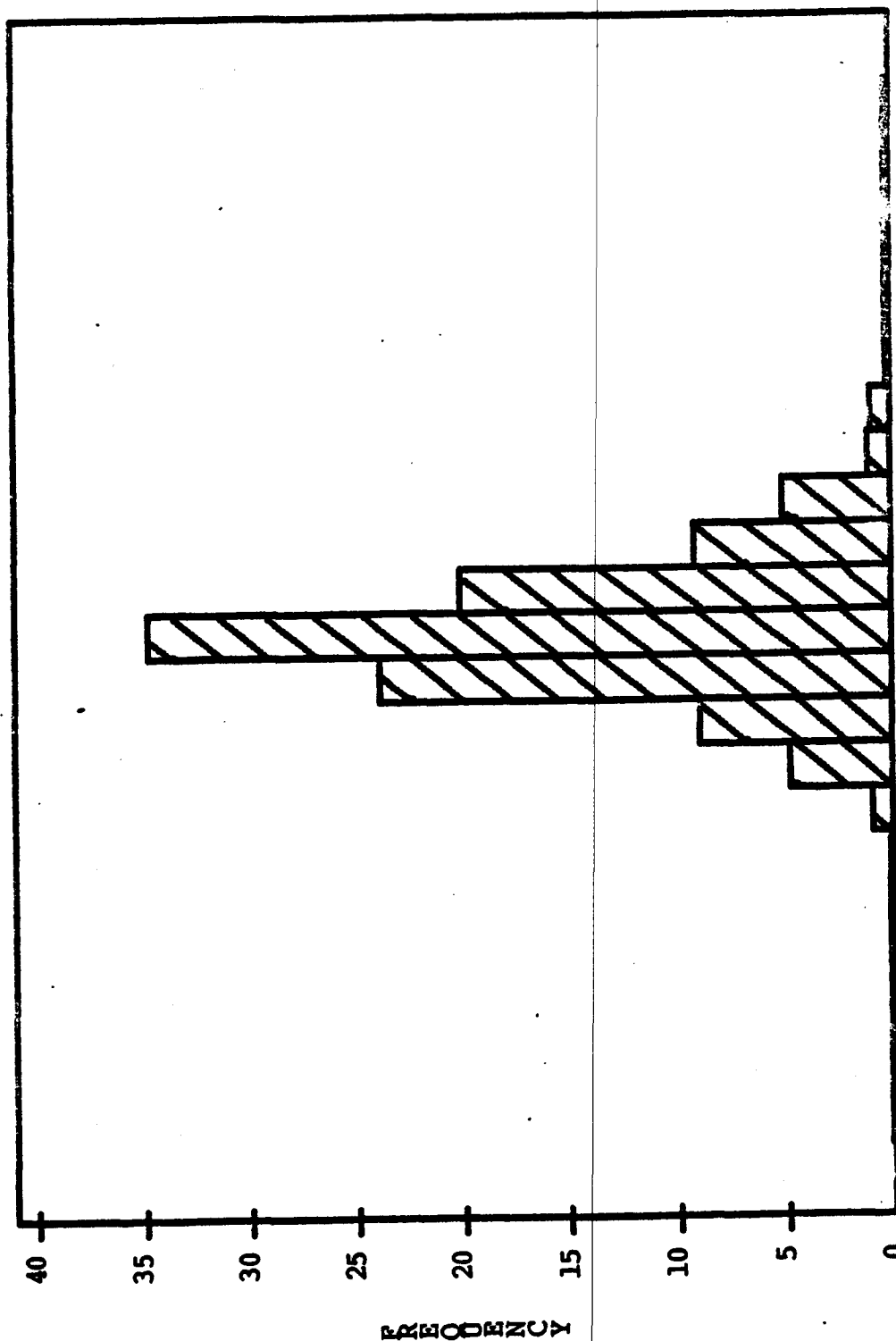
1984-- BOX 775 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 81



1984-- BOX 776 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=110



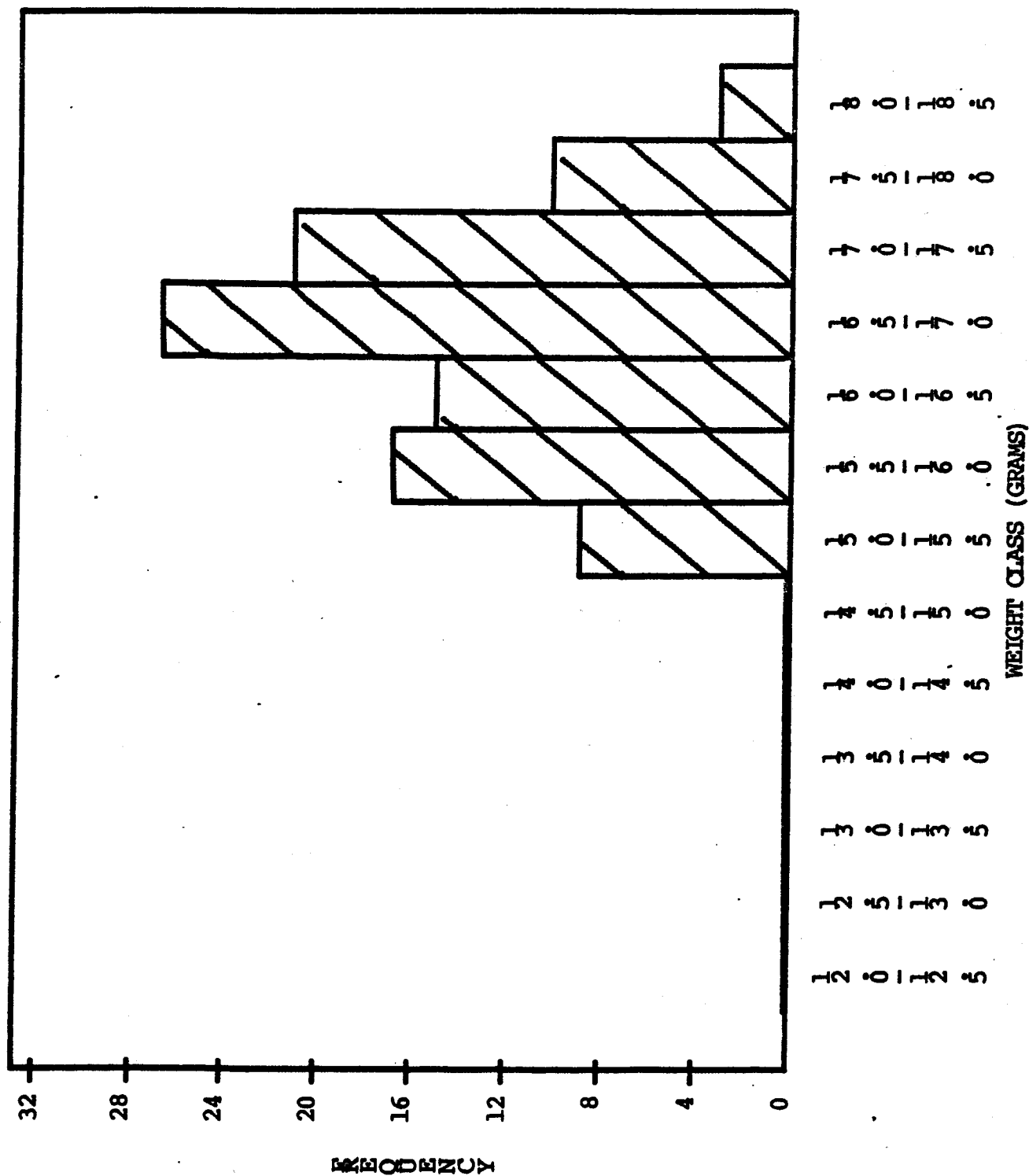
1984-- BOX 776 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=110



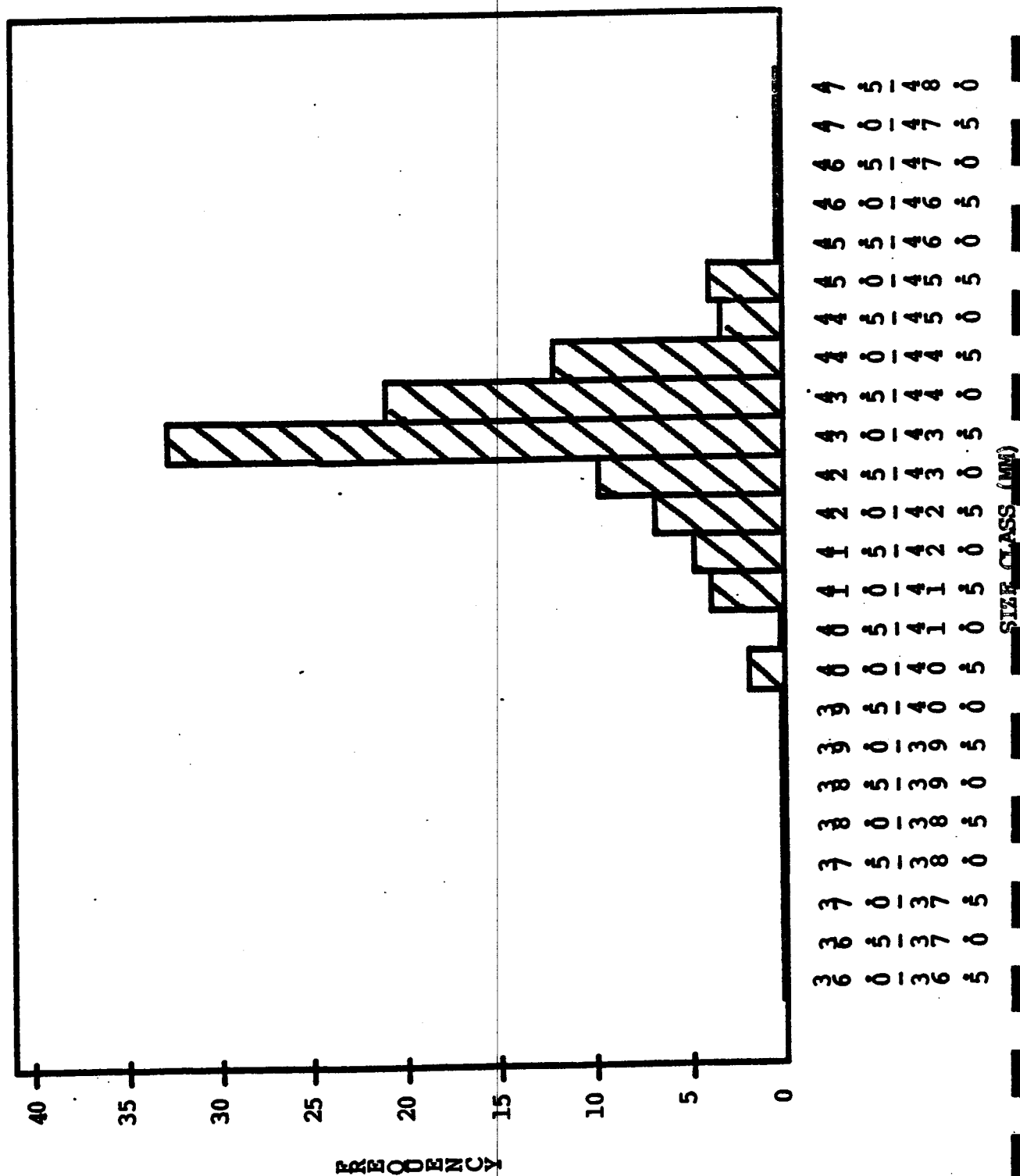
37 5-38 0
 38 0-38 5
 38 5-39 0
 38 5-39 5
 39 0-39 0
 39 0-39 5
 40 0-40 0
 40 0-40 5
 40 5-41 0
 41 0-41 5
 41 5-42 0
 41 5-42 5
 42 0-42 5
 42 5-43 0
 43 0-43 5
 43 5-44 0
 44 0-44 5
 44 5-45 0
 45 0-45 5
 45 5-46 0
 46 0-46 5
 46 5-47 0
 47 0-47 5
 47 5-48 0
 48 0-48 5
 48 5-49 0
 49 0-49 5

SIZE CLASS (MM)

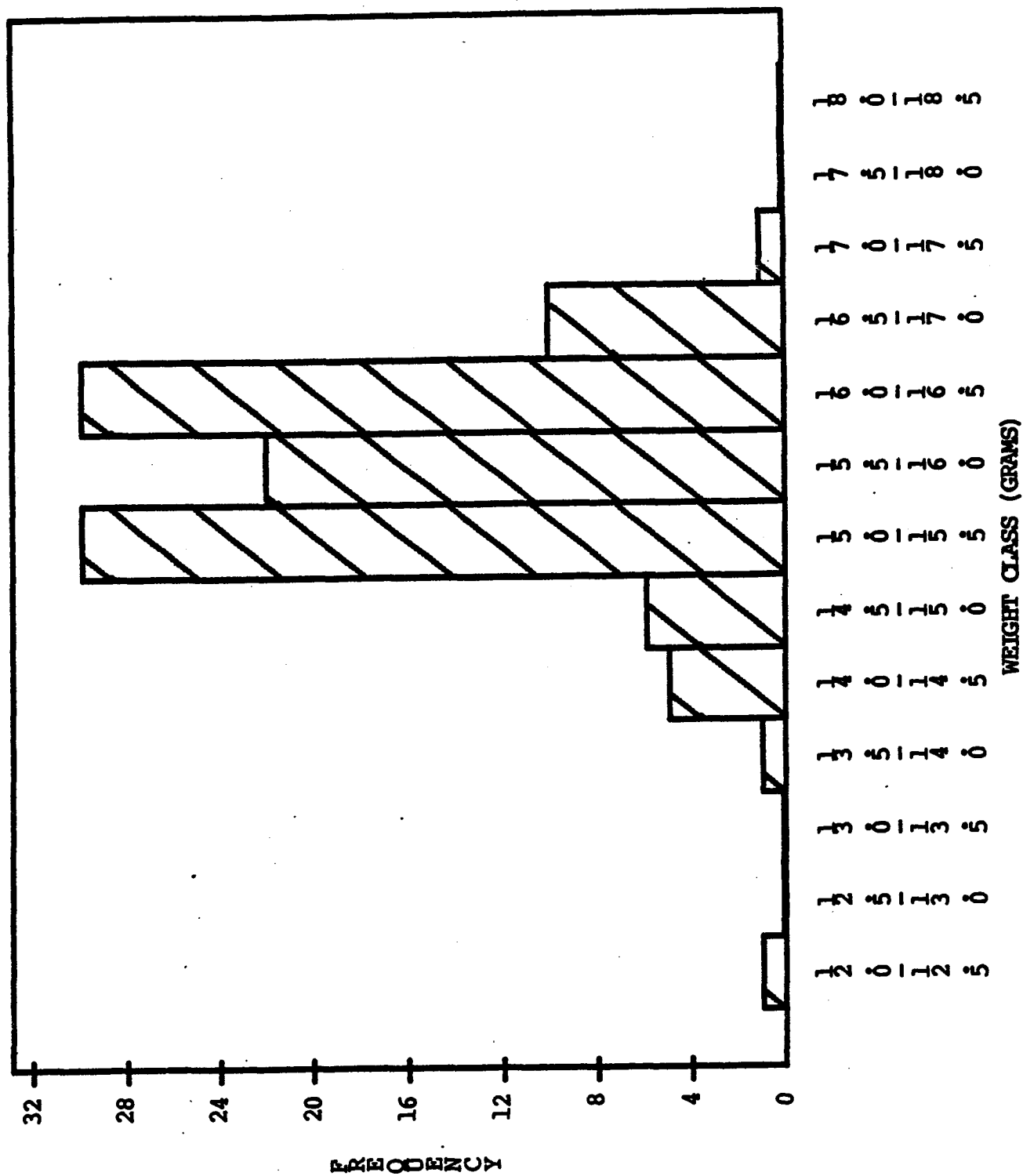
1984- BOX 797 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=102



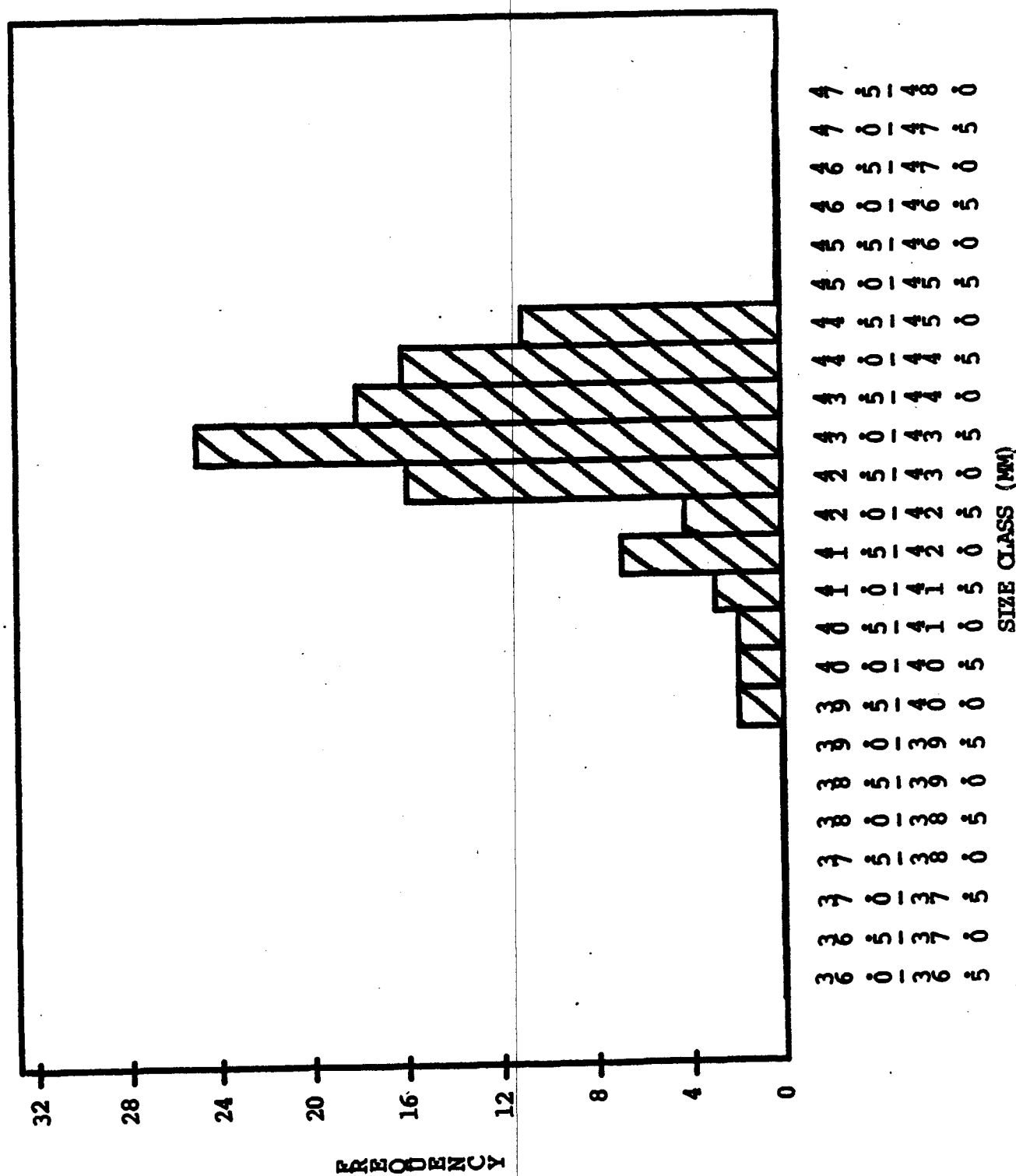
1984- BOX 797 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=102



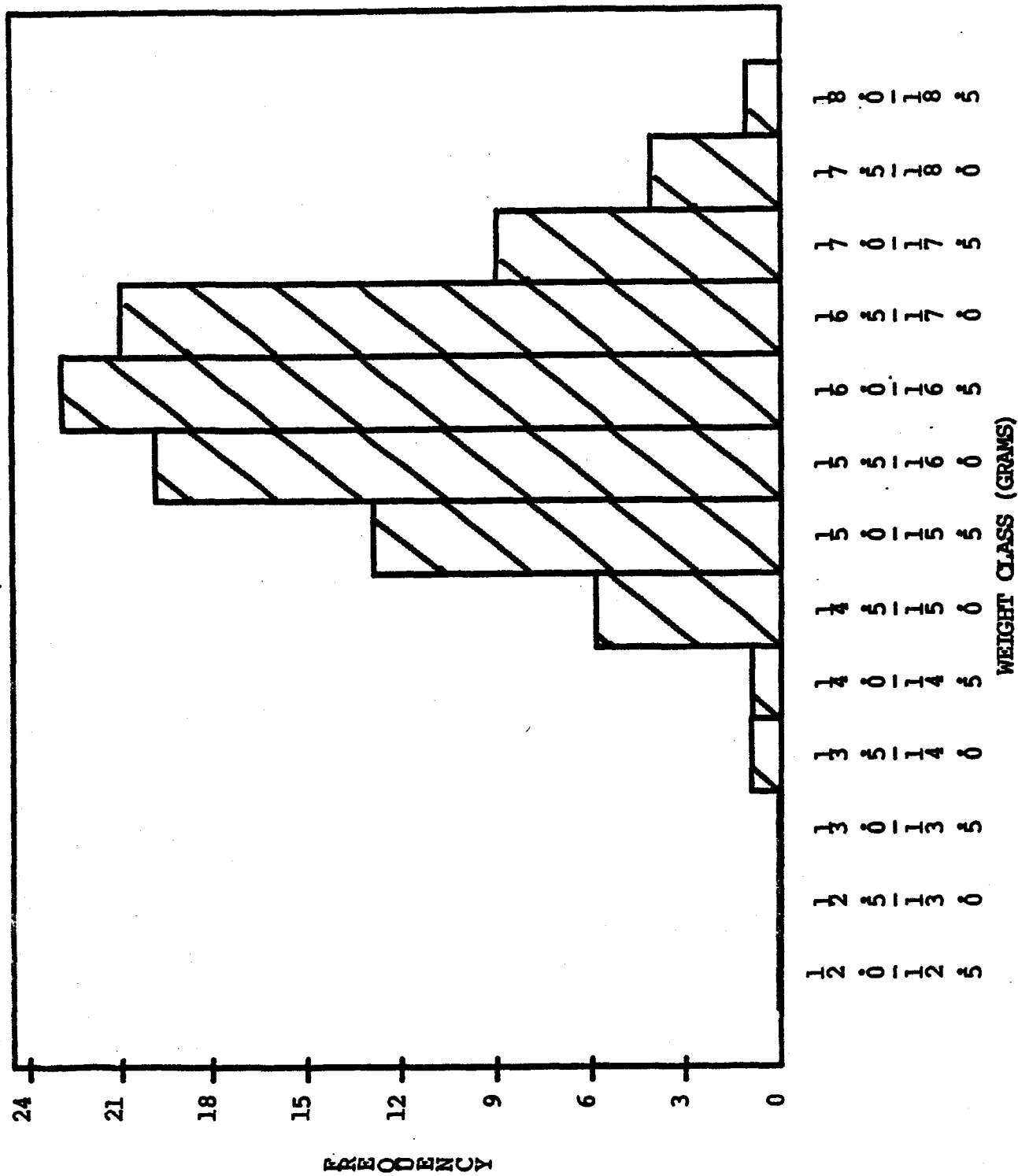
1984-- BOX 798 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=106



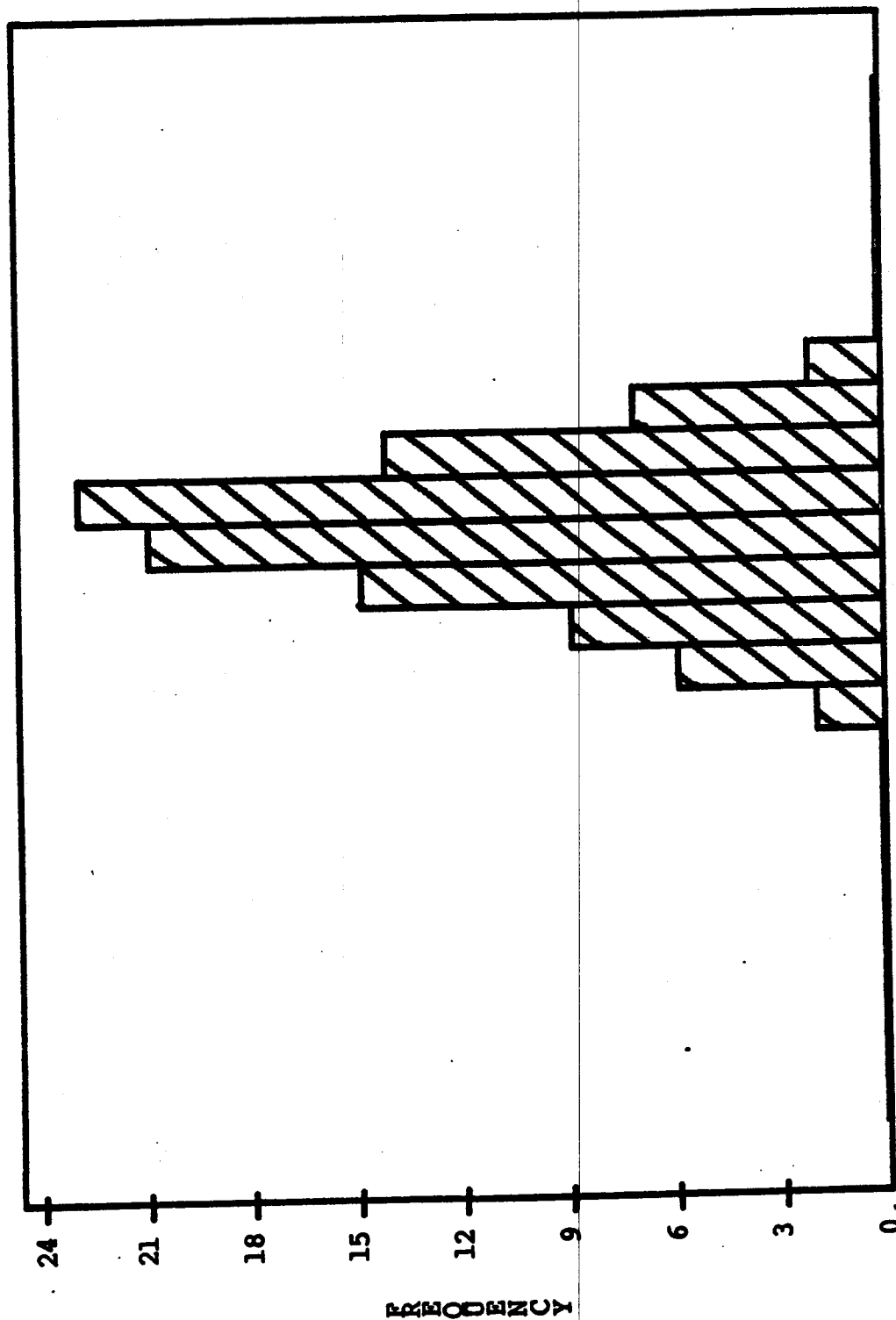
1984-- BOX 798 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=106



1984-- BOX 799 KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM IF= 99

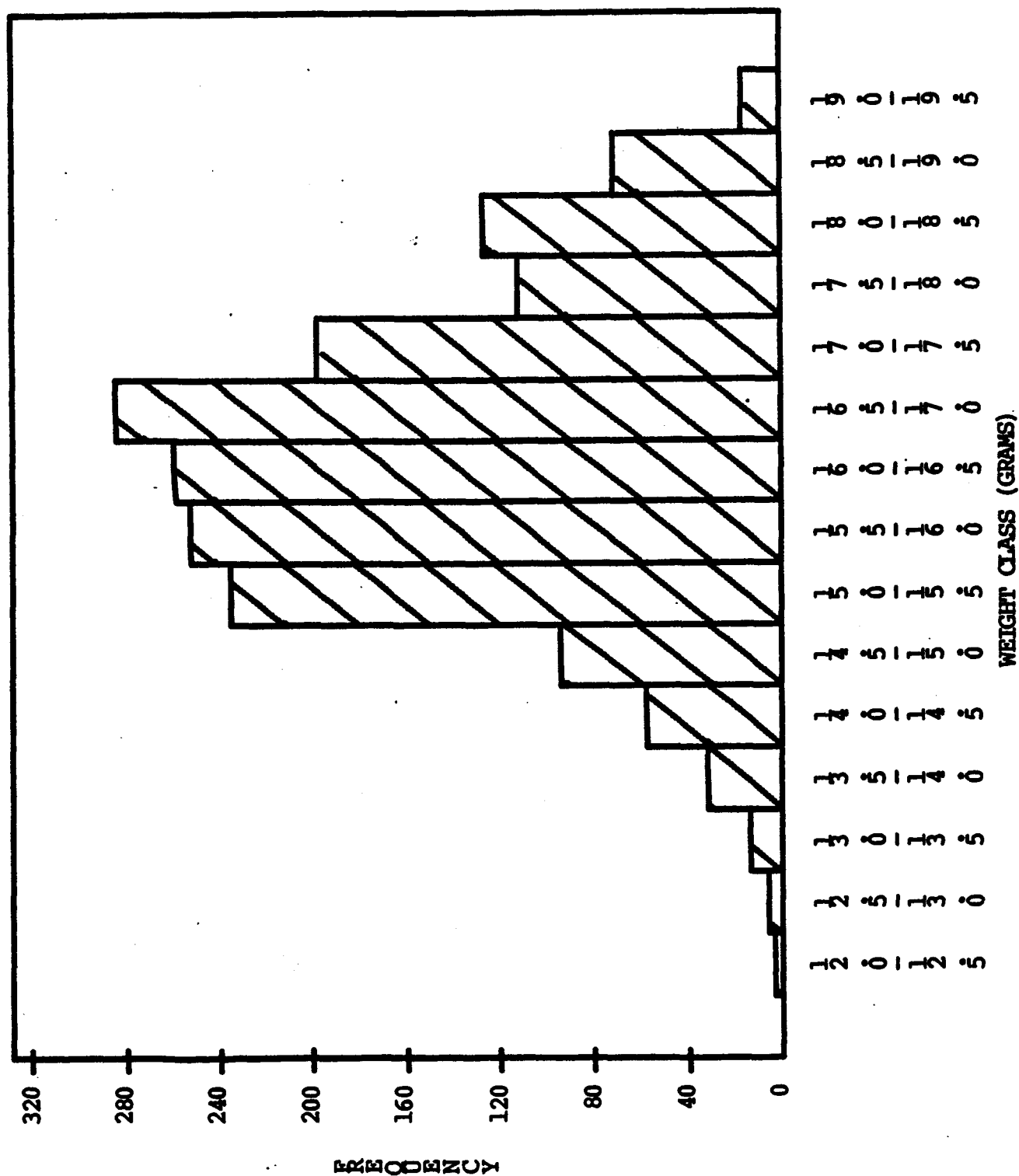


1984- BOX 799 KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n= 99



36 0-36 5
36 5-37 0
37 0-37 5
37 5-38 0
38 0-38 5
38 5-39 0
39 0-39 5
39 5-40 0
40 0-40 5
40 5-41 0
41 0-41 5
41 5-42 0
42 0-42 5
42 5-43 0
43 0-43 5
43 5-44 0
44 0-44 5
44 5-45 0
45 0-45 5
45 5-46 0
46 0-46 5
46 5-47 0
47 0-47 5
47 5-48 0
48 0-48 5
48 5-49 0

1984-- PADRE ISLAND KEMP'S RIDLEY HATCHLING WEIGHT (GRAMS) HISTOGRAM n=1773



1984-- PADRE ISLAND KEMP'S RIDLEY HATCHLING STRAIGHT LINE CARAPACE LENGTH (MM) n=1773

