A C T A  A D R I A T I C A
INSTITUT ZA OCEANOGRAFIJU I RIBARSTVO U SPLITU
FNR JUGOSLAVIJA

Vol. IV. No. 12.

# THE FIRST FINDINGS AND OCCURRENCE OF *LATREILLIA ELEGANS* ROUX IN THE ADRIATIC

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SPLIT 1952

# THE FIRST FINDINGS AND OCCURRENCE OF *LATREILLIA ELEGANS* ROUX IN THE ADRIATIC

by

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*Latreillia elegans* Roux had not formely been registered to occur in the Adriatic. Its presence in that sea has been proved on the basis of the material deriving from the Fishery Biological Expedition M. V. »Hvar«.

## MATERIAL

The material derives from the fishing experiments with trawl. Those, experiments took place in the course of M. V. »HVAR« cruises in 1948—1949 in the high Adriatic. Some hauls were made also in the Mid- and South-Adriatic channels (Zadar, Split and Šipan Channels). 308 hauls in all were made on 172 stations.

Additional 31 catches deriving from 31 stations situated in the South Adriatic and in the Jabuka depression (September 1949) and 4 catches deriving from 4 stations situated in the channel region of the North Adriatic, viz. Kvarner, Kvarnerić, Podvelebitski and Planinski Channels (June 1951), were examined later on.

The total number of catches which were examined amounted to 343. Only 39 out of the above mentioned catches, deriving from 36 various stations, were positive with regard to this species. The total number of findings of *Latreillia elegans* Roux amounted to 69 specimens. Two catches yielded fragments only, which were considered as positive findings, so that 71 specimens were registered in all. There were 29 males and 40 females, with two individuals of unknown sex belonging to the stations where fragments only were found.

## GENERAL DISTRIBUTION OF THE SPECIES

This species, which was formerly considered very rare and exclusively Mediterranean (Heller, 1863, Milne-Edwards, H. 1834), has been later found in the regions of the Azores and Canary Islands (»TRAVAILLEUR«, »TALISMAN«, and »HIRONDELLE« Expeditions) and in the West Atlantic, while, according to Monod (1933), this species occurs also in South African waters.

## DISTRIBUTION IN THE ADRIATIC

Neither in the Adriatic channel region nor in the north section of the high Adriatic there were findings of specimens of *Latreillia elegans* Roux.

The occurrence of this species was determined in the following regions: in the vicinity of the Jabuka depression, and in the open sea south west of Drvenik and Biševo Islands, whilst south of Vis Island the occurrence of this species stretches as far as to the outermonst stations of the Expedition towards the Cape Testa del Gargano. It further occurs south of Mljet Island, south of Dubrovnik and west of Ulcinj. In the open sea off the Albanian coast it was found west of the Cape Rodoni and west of the Cape Semana (Sqepi, and Semanit) as well as west of Himara.

The cause of the absence of *Latreillia elegans* Roux in the north section of the high Adriatic and in the Adriatic channel region probably lies in the insufficient depth of water there. Bouvier (1940) has it that this species thrives on coral or sand bottom lying between 150 and 350 m below sea surface. Our findings derive not only from sand-grounds but from mud-grounds also. The bathymetric distribution of *Latreillia elegans* Roux in the Adriatic begins already with 100 m, and our findings occurred at different depths up to over 250 m. With the exception of a small number of cases, fishing experiments were not applied to greater depths.

Although fishing experiments were made on each station two or more times during the year, this species was found twice in three cases only (on Stations No. 67, 112, and 130). The fact, that mere fragments were found twice in the cod-end, justifies the doubt that this gracil crab might have fallen out from the net during the hauls. The cod-end meshes measured 26 mm.

The temperature of the sea water close to the bottom on the finding places of *Latreillia elegans* Roux varied between 11.4 and 11.8° C and the salinity ran between 37.81 and 38.78 ‰.

## TIME OF PROPAGATION

Females with eggs were found in January (1949), May, June, July, September, and November (1948). The non-appearance of the missing months, however, is not due to the catches being negative with berried females, but owing to the fact that either no work was done in the regions where *Latreillia elegans* R o u x occurs, or that the work had to be interrupted on account of bad weather or some average aboard the motor vessel.

Only three out of 40 captured females were not berried. One of those was captured in August 1948, but as that one was the only specimen catched in this month there are not sufficient data enabling us to draw a conclusion on the propagation of *Latreillia elegans* R o u x in August. One female specimen without eggs was captured in May and another in November 1948. At the same time, however, several berried females were also catched (5 in May, 9 in November), and there is no doubt about the fact that the females have eggs in May and November too. Two stations which were positive as to *Latreillia elegans* R o u x during the first cruise (from 26. II. to 18. VIII. 1948), were included in our December work, but no specimen was captured. Thus it has not been proved whether females having eggs in December also. Neither there are data thereon for February and March, because males only were catched at that time. In February, March, April, August, October and December no berried females were caught then, but it is likely that berried females occurs in some of these months also. Further researches may provide data for those missing months. The period is rather long, however, during which the females of the species *Latreillia elegans* R o u x in the Adriatic are in berry.

The colour of the eggs, which is pale yellowish-green, is similar to that of the carapace, being thus unconspicuous.

Exterior eggs were counted on six females. Samples consisting of several tens of eggs were taken from each female and measured. The material was preserved in 4% formalin. The number of eggs varied widely and amounted in the case of females concerned: 496, 1250, 1312, 1775 and 1976. The diameter of the eggs reached mostly 0.43 mm, and its extreme measures were 0.39 and 0.56 mm.

## BODY LENGTH

By measuring 65 undamaged individuals, the following lengths of carapace (including rostrum) were obtained:

| mm | Individuals ♂ | ♀ |
|---|---|---|
| 9 | 1 | — |
| 10 | 3 | 1 |
| 11 | 2 | 4 |
| 12 | 19 | 16 |
| 13 | 2 | 7 |
| 14 | — | 6 |
| 15 | — | 2 |
| 16 | — | 2 |
| Total | 27 | 38 |

The maximal width of the carapace of all the individuals was half their length, in rare cases from 0.5 to 1.0 mm more or less.

When considering the above measurements it appears that the females of the species *Latreillia elegans* Roux are bigger than the males. The mean length value (as resulting from the above limited number of specimens) amounts to 11.67 mm for males and 12.71 mm for females.

## COLOUR

The carapace looks like porcelain of a pale yellowish colour, with lengthwise running wine-brown stripes. The latter are sometimes unsufficiently marked, but the side stripes are most distinct. The legs are transversely striped with wine-brown stripes.

# *LATREILLIA ELEGANS ROUX*

## CAPTURE - TABLE

*PREGLED ULOVLJENIH PRIMJERAKA*

(Unless otherwise stated in the remarks with regard to females, beried females are involved here)

*(Ako za ženke u bilješkama nije drukčije navedeno, radi se o primjercima sa vanjskim jajima)*

| Date *Datum* | Station *Postaja* | Position *Postaja* N | Position *Postaja* E | Depth *Dubina* m | Bottom *Vrsta dna* | Specimens *Primjeraka* ♂ | Specimens ♀ | Specimens Total *Ukupno* | Remarks *Bilješke* |
|---|---|---|---|---|---|---|---|---|---|
| 8. V. 1948 | 121 | 42° 37,5′ | 17° 07′ | 150 –152 | LC | ? | ? | 1 | fragments *fragmenti* |
| 16. V. 1948 | 119a | 42° 38′ | 16° 53,5′ | 148 | C | — | 1 | 1 | |
| 17. V. 1948 | 123 | 42° 41′ | 17° 17′ | 132—144 | C | 1 | 2 | 3 | |
| 23. V. 1948 | 130 | 42° 25,5′ | 17° 57,5′ | 154—114 | CL | 1 | — | 1 | |
| 24. V. 1948 | 131 | 42° 28,5′ | 17° 56′ | 204—125 | CSL | — | 1 | 1 | |
| 27. V. 1948 | 137 | 41° 57,5′ | 18° 47,5′ | 106—101 | CSL | — | 2 | 2 | 1 ♀ not berried *bez vanj. jaja* |
| 4. VI. 1948 | 167 | 40° 08,5′ | 19° 32,5′ | 236—256 | LC | — | 4 | 4 | |
| 10. VI. 1948 | 161 | 40° 43,5′ | 19° 03′ | 172—148 | L | — | 3 | 3 | |
| 11. VI. 1948 | 153 | 41° 21,5′ | 19° 06′ | 108—112 | SL | — | 1 | 1 | |
| 11. VI. 1948 | 150 | 41° 30′ | 19° 05,5′ | 123—124 | C | 2 | 2 | 4 | |
| 17. VI. 1948 | 140 | 41° 49′ | 18° 47,5′ | 101— 95 | SL | 2 | — | 2 | |
| 22. VI. 1948 | 126 | 42° 40,5′ | 17° 35′ | 119—132 | CSL | 1 | — | 1 | |
| 22. VI. 1948 | 122 | 42° 31,5 | 17° 18,5′ | 225—183 | — | 2 | — | 2 | |
| 23. VI. 1948 | 96 | 42° 46′ | 16° 12,5′ | 144—137 | CSL | 2 | — | 2 | |
| 18. VII. 1948 | 112 | 41° 54′ | 16° 45′ | 155—142 | LCS | — | 1 | 1 | |
| 25. VII. 1948 | 40 | 43° 35′ | 15° 24′ | 181—123 | CL | 1 | — | 1 | |
| 30. VII. 1948 | 67 | 43° 21′ | 15° 54,5′ | 126 | LS | 1 | — | 1 | |
| 2. VIII. 1948 | 65 | 43° 00′ | 15° 27,5′ | 170—186 | C | — | 1 | 1 | 1 ♀ not berried *bez vanj. jaja* |
| 8. IX. 1948 | 36 | 43° 31,5′ | 15° 09,5′ | 121—128 | CLS | — | 1 | 1 | |
| 10. IX. 1948 | 71 | 43° 15′ | 15° 54′ | 117—123 | LS | 2 | — | 2 | |
| 11. IX. 1948 | 61 | 43′ 10,5 | 15° 32,5′ | 146—159 | L | 2 | 2 | 4 | |
| 11. IX. 1948 | 52 | 43° 17′ | 15° 25′ | 188—182 | LC | 1 | — | 1 | |
| 12. IX. 1948 | 79 | 42° 55,5 | 15° 48′ | 117—137 | LCS | — | 1 | 1 | |
| 24. IX. 1948 | 97 | 42° 15′ | 16° 00′ | 126—122 | C | 2 | 2 | 4 | |
| 24. IX. 1948 | 104 | 42° 10′ | 16° 21′ | 126—128 | LC | 1 | 1 | 2 | |
| 24. IX. 1948 | 105 | 42° 20,5′ | 16° 23′ | 154—136 | S | — | 1 | 1 | |
| 13. XI. 1948 | 118 | 42° 38,5′ | 16° 47′ | 150—144 | L | — | 1 | 1 | |
| 15. XI. 1948 | 99 | 42° 33,5′ | 16° 11′ | 170—174 | C | 2 | 2 | 4 | |
| 15. XI. 1948 | 106 | 42° 31′ | 16° 25,5′ | 186—175 | C | — | 1 | 1 | |
| 16. XI. 1948 | 113 | 42° 14,5′ | 16° 44′ | 206—224 | L | 1 | — | 1 | |
| 16. XI. 1948 | 117 | 42° 26′ | 16° 51′ | 212—173 | — | — | 2 | 2 | |
| 22. XI. 1948 | 124 | 42° 35,5′ | 17° 26′ | 164—201 | CSL | — | 2 | 2 | 1 ♀ not berried *bez vanj. jaja* |
| 24. XI. 1948 | 127 | 42° 33′ | 17° 46′ | 190—141 | C | 1 | — | 1 | |
| 27. XI. 1948 | 135 | 42° 31′ | 18° 16′ | 110—107 | CSL | — | 1 | 1 | |
| 28. XI. 1948 | 130 | 42° 25,5 | 17° 57,5′ | 276—170 | CL | — | 1 | 1 | |
| 28. I. 1949 | 67 | 43° 21′ | 15° 54,5′ | 126—137 | LS | — | 1 | 1 | |
| 18. II. 1949 | 115 | 42° 04,5′ | 16° 53′ | 175—245 | CS | ? | ? | 1 | fragments *fragmenti* |
| 18. II. 1949 | 112 | 41° 54′ | 16° 45′ | 145—141 | LCS | 1 | — | 1 | |
| 29. III. 1949 | 45 | 43° 01′ | 14° 54,5′ | 132—176 | CLS | 1 | — | 1 | |
| 5. IX. 1949 | 15/I | 43° 07′ | 15° 30′ | 145 | L | 2 | 3 | 5 | |
| | | | | | | 29 | 40 | 69 | |
| | | | | | | | | 2 | specimens in fragments *fragmentarna* |
| | | | | | Total Ukupno | 29 | 40 | 71 | |

C = Clay *Glina*

LC = Loamy clay *Ilovasta glina*

CL = Clay loam *Glinasta ilovača*

L = Loam *Ilovača*

CSL = Clay sandy loam *Glinasto pieskovita ilovača*

SL = Sandy loam *Pjeskovita ilovača*

CS = Clay sand *Glinasti pijesak*

LS = Loamy-sand *Ilovasti pijesak*

LCS = Loamy clay sand *Ilovasto glinasti pijesak*

CLS = Clay-loami sand *Glinasto ilovasti pijesak*

S = Sand *Pijesak*

## SUMMARY

1. The first findings of the decapod crab *Latreillia elegans* Roux in the Adriatic sea occured in the course of the Fishery Biological Expedition M. V. »HVAR« in 1948—1949. 71 specimens were captured in the high Adriatic, 29 of which were males and 40 females, while 2 damaged individuals were of unknown sex.

2. This species was not found in the more shallow northern section of the Adriatic. It occurs in depths of 100 m upwards (we worked mostly up to about 250 m, and in rare cases up to 400 m). The findings, accordingly, are supplemental to the alredy available data on the bathimetric distribution of this species as its most shallow finding place occurred at a depth of 150 m.

3. This decapod species was found not only on sand-bottom but on mud-bottom as well. That fact adds to hitherto available data given by the literature, according to which the occurrence of this species was found on sand bottom and on coral biotope.

4. The temperature of the sea water close to the bottom, at the stations which were positive as to *Latreillia elegans* Roux, variyng between 11.4 and 14.8° C, and the salinity running between 37.81 and 38.78 ‰. No dependence of the distribution of *Latreillia elegans* Roux upon these factors could be found within the investigated area. The factor of depth remains, then, for the time being, as the only perceivable factor responsible for the distribution of this species.

5. Females in berry were found in January (1949), May, June, July, September and November (1948). During some months, which are not quoted here, our work did not always involve depths suitable for this species or no work at all was done owing to the interruptions of our cruise. The period of propagation appears, however, to be widely extended in time.

6. Eggs were counted in the case of six females. The number of eggs varied from 496 to 1976. The eggs are not conspicious owing to the fact that they are of the same colour as the carapace. The diameter of the eggs runs from 0.34 to 0.56 mm. The material was preserved in 4% formalin.

7. It has been determined that the female individuals are bigger than the male ones. The mean value of length, resulting from a limited number of available specimens. amounts to 11.67 mm for males and 12.71 mm for females.

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This paper was submitted to the Scientific Board of the Institute on the 18th January, 1952.

## KRATAK SADRŽAJ

1. Prvi nalazi dekapodnog raka *Latreillia elegans* Roux u Jadranskom moru utvrđeni su u toku ribarstveno-biološke ekspedicije »HVAR« 1948.—1949. g. Na otvorenom Jadranu ulovljeno je vučom (trawl-om) 71 primjerak, od kojih 29 mužjaka, 40 ženki i 2 oštećena primjerka nepoznatog spola.

2. U plićem sjevernom dijelu Jadrana ova vrsta nije utvrđena. Javlja se u srednjem i južnom Jadranu na dubinama od 100 m pa na dublje. Ovi nalazi, prema tome, dopunjuju dosadašnje podatke o batimetrijskoj raspodjeli ove vrste utoliko, što je dosad njeno najpliće nalazište bilo pronađeno na 150 m dubine. Naši eksperimenti ribarenja vršeni su većinom do dubine od cca 250 m, a samo rjeđe i do 400 m.

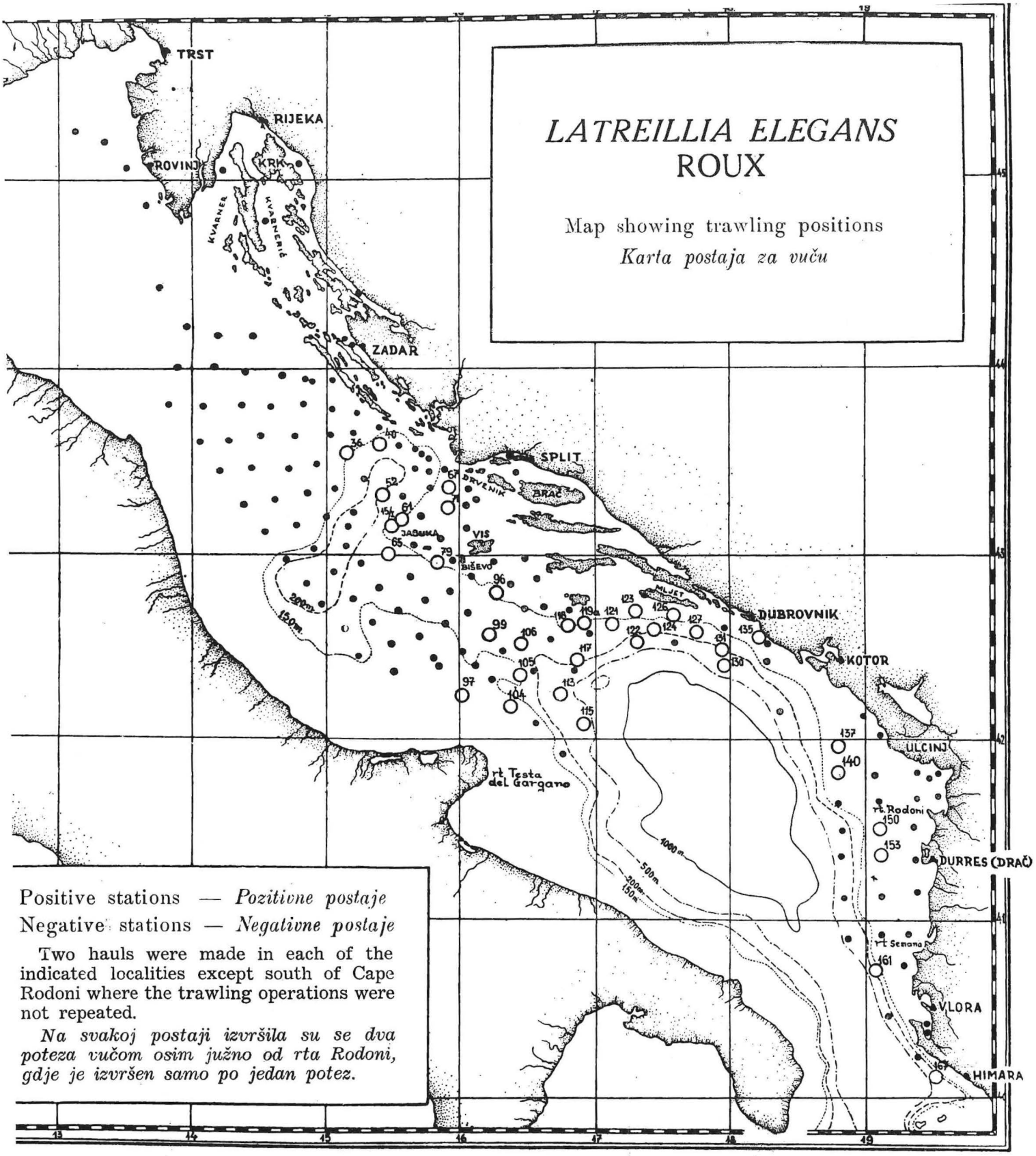
3. Ovu dekapodnu vrstu našli smo na pjeskovitom, kao i na čisto muljevitom dnu. Time se dopunjuju dosadašnji podaci iz literature, prema kojima se ova vrsta nalazila jedino u pjeskovitom i koraljnom biotopu.

4. Temperatura na dnu mora, na postajama pozitivnim na *Latreillia elegans* Roux varirala je između 11,4 i 14,8° C, a salinitet između 37,81 i 38,78 ‰. Nije mogla biti utvrđena nikakva eventualna zavisnost rasprostranjenosti *Latreillia elegans* Roux u ovim faktorima unutar ispitanog područja. Prema tome, ostaje zasad kao jedini uočljiv faktor za njenu rasprostranjenost faktor dubine.

5. Ženke sa vanjskim jajima utvrđene su u mjesecima januaru (1949. g.), maju, junu, julu, septembru i novembru 1948. g. U nekim mjesecima, koji ovdje nisu spomenuti, vjerovatno ženke također nose vanjska jaja, ali se to nije moglo utvrditi, što se u to doba jednim dijelom nije radilo na dubinama pogodnim za ovu vrstu, a drugim se dijelom prekidalo putovanje uopće. U svakom slučaju period razmnožavanja ukazuje se vremenski vrlo širok.

6. Kod 6 ženki izbrojana su vanjska jaja. Broj jaja je varirao od 496 do 1976. Jaja ne upadaju u oči, jer su iste boje kao i *cephalothorax*. Njihov promjer iznosi između 0,387 i 0,559 mm. Materijal je bio konzerviran u 4% formalinu.

7. Utvrđeno je, da su ženke veće od mužjaka. Srednja vrijednost dužine, izračunata na malom broju raspoloživih primjeraka, iznosi za mužjake 11,67, a za ženke 12,71 mm.




# *LATREILLIA ELEGANS* ROUX

Map showing trawling positions

*Karta postaja za vuču*

Positive stations — *Pozitivne postaje*

Negative stations — *Negativne postaje*

Two hauls were made in each of the indicated localities except south of Cape Rodoni where the trawling operations were not repeated.

*Na svakoj postaji izvršila su se dva poteza vučom osim južno od rta Rodoni, gdje je izvršen samo po jedan potez.*