

STUDIES ON THE FAUNA OF CURAÇAO AND OTHER
CARIBBEAN ISLANDS: No. 33.

NEMATODES OF THE GENUS *OZOLAIMUS* IN
WEST INDIAN IGUANAS

by

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This paper contains some morphological and statistical data on a number of *Ozolaimus* populations gathered from entire specimens of *Iguana iguana iguana* — injected with formaline and/or alcohol for general purposes only — and from a few intestinal tracts that had been preserved separately. Further research on these samples — which, on the whole, still contain quite a number of other nematode species — has been entrusted to Dr. E. CABALLERO Y C., México.

All *Iguana* specimens studied (see Table 6) were collected by Dr. P. WAGENAAR HUMMELINCK, with the exception of Nos. 11 (Dr. J. BOEKE), 11a-b (Dr. A. C. J. BURGERS), 45-50 (Dr. D. C. GEIJSKES), and 51 (unknown collector). The hosts — except for Nos. 8, 11a-b, 45-50 — have been deposited in the State Museum of Natural History, Leiden, and in the Zoological Museum, Amsterdam.

The *Ozolaimus* material studied — usually only a part of the populations present — has been given to the following institutions: American Museum of Natural History, New York (Nos. 6, 12, 35, 45); British Museum (Natural History) (Nos. 3, 9, 21, 41, 43, 47); Rijksmuseum van Natuurlijke Historie, Leiden (Nos. 2, 7, 19, 38, 42, 44, 48); U.S. National Museum, Washington (Nos. 1, 10, 14, 34, 40, 46); Zoölogisch Museum, Amsterdam (Nos. 11, 24, 50).

It appeared unnecessary to differentiate between measurements of formaline and of alcohol specimens, although the general condition of the former proved to be better. Only ovigerous females, and males considered to have well-developed sexual organs, were examined. Measurements were made by means of an ocular micrometer, to the nearest 0.01 or 0.02 mm, depending on degree of enlargement and subject.

The author is greatly indebted to Dr. P. WAGENAAR HUMMELINCK, of the Zoological Laboratory, Utrecht, for his helpful interest and his assistance in the course of the work, including preparation of this paper. Thanks are also due to Ir. J. J. BEZEM of the same institute, for his advice on the statistical treatment of the measurements.



Fig. 27. Adult specimens of *Ozolaimus* from the coecum of *Iguana iguana iguana*. From left to right: *O. megatyphlon* ♀ (Margarita) and ♂ (Bonaire); *O. cirratus* ♀ (Margarita) and ♂ (Suriname). — *a-b* first part of oesophagus, *b-c* second part of oesophagus, *d-e* distance from vulva to anus, *f-g* length of ♂ tail, as measured; see Tables 7 and 8.

The genus *Ozolaimus* Dujardin, 1845 — family *Oxyuridae* — is characterized, above all, by the oesophagus, which is composed of two distinct parts: an anterior part, ending in a fusiform swelling, and a posterior, more narrow part, ending in a distinct bulbous.

Ozolaimus ctenosauri Caballero, 1938, therefore belongs to another genus (see also DOSSE, 1939).

Ozolaimus Dujardin includes two species which may be distinguished, at first glance, by differences in the form and relative size of their oesophagus (see Fig. 27).

TABLE 6.

The occurrence of *Ozolaimus* in the coecum of West Indian *Iguana iguana iguana* (Size = nose tip to anus in cm. Numbers of worms often roughly estimated.)

Number	Locality	Date	Size	Sex	Estimated numbers of Nematodes				
					<i>O. megalotyphlon</i>		<i>O. cirratus</i>		other
					♂	♀	♂	♀	
1	LA GOAJIRA Rio Hacha	18.I.1937	15	♂	2400	1300	80	100	many
ARUBA									
2	Oranjestad	23.XII.1936	22½	♀	10	10	400	750	many
3	Oranjestad	23.XII.1936	20	♂	2	0	20	25	many
4	Oranjestad	23.XII.1936	26	♂	140	200	230	410	many
5	Oranjestad	27.II.1955	27½	♀	80	550	10	100	few
6	Fontein	26.VIII.1949	15½	♂	280	230	25	50	abundant
CURAÇAO									
7	St Kruis	25.IV.1930	19	♀	600	700	90	50	many
8	St Martha	4.XII.1948	abt. 20	—	130	210	15	15	few
9	Porto Marie	19.IV.1930	21	♂	1300	2200	190	210	many
10	Porto Marie	19.IV.1930	24½	♀	2000	2500	290	380	few
11	"Curaçao"	1905	25	♀	310	650	100	210	many
11a	Westpunt	12.III.1957	abt. 20	—	40	50	20	20	few
11b	San Pedro	26.V.1957	abt. 15	—	80	680	40	80	few
BONAIRE									
12	Rooi Lamoenchi	15.X.1930	abt. 20	—	1100	3400	0	0	few
13	Slagbaai	3.XI.1930	abt. 20	—	0	0	0	0	many
BLANQUILLA									
14	Valuchu	21.VII.1936	14½	—	900	1200	3	2	few
MARGARITA									
15	Porlamar	19.V.1936	25	♀	60	390	0	0	abundant
16	Porlamar	19.V.1936	20½	♀	420	500	100	80	many
17	Porlamar	27.V.1936	12½	♂	120	100	10	5	few
18	Porlamar	27.V.1936	14	♂	550	750	0	0	few
19	Porlamar	27.V.1936	13	♀	310	220	10	10	few
20	Porlamar	27.V.1936	13½	♀	460	460	10	0	few
21	Porlamar	31.V.1936	19½	♀	600	1400	45	130	abundant
22	Porlamar	31.V.1936	15	—	300	200	10	5	few
23	Porlamar	31.V.1936	14½	—	250	600	10	5	few
23a	Porlamar	31.V.1936	abt. 20	—	980	580	30	30	few
23b	Porlamar	31.V.1936	abt. 20	♂	500	450	70	120	few
24	Guatamare	26.V.1936	18½	♂	480	190	15	25	many
25	Guatamare	26.V.1936	22½	♀	550	2000	60	40	many
26	Guatamare	26.V.1936	22	♀	30	230	0	25	many
27	Guatamare	26.V.1936	abt. 15	—	240	400	50	50	few
28	Guatamare	26.V.1936	abt. 15	—	25	60	0	5	many
29	Guatamare	26.V.1936	abt. 20	—	700	1100	60	290	few
30	Guatamare	26.V.1936	abt. 20	—	5	200	0	10	abundant
31	Guatamare	26.V.1936	abt. 20	—	250	500	50	80	few
32	Guatamare	26.V.1936	abt. 20	—	100	900	5	40	many

Specimens of <i>Iguana</i>					Estimated numbers of Nematodes				
Number	Locality	Date	Size	Sex	<i>O. megatyphlon</i>		<i>O. cirratus</i>		other
					♂	♀	♂	♀	
SUCRE									
33	I. de Caribes	26.VI.1936	7	—	0	0	0	0	none
33a	I. de Caribes	26.VI.1936	7	—	0	0	0	0	none
33b	I. de Caribes	26.VI.1936	7	—	0	0	0	0	none
LOS FRAILES									
34	La Pecha	19.VI.1936	31	♀	0	0	1	2	abundant
LOS TESTIGOS									
35	Morro Iguana	14.VI.1936	15	♂	50	45	20	10	none
36	Tamarindo	16.VI.1936	8	—	0	0	0	0	none
ST. EUSTATIUS									
37	Oranjestad	7.VII.1949	30½	♀	0	0	0	0	abundant
38	The Quill	9.VII.1949	abt. 30	♀	0	0	250	650	many
SABA									
39	Bottom	IV.1937	8½	—	0	0	0	0	many
40	Bottom	20.VII.1949	35½	♀	30	200	8	15	few
41	Bottom	23.VII.1949	36	♂	0	10	1	3	few
42	Bottom	23.VII.1949	38½	♀	1	3	10	4	abundant
43	Bottom	28.VII.1949	abt. 30	—	0	0	0	40	many
ST. BARTHÉLEMY									
44	Lorient	3.VI.1949	abt. 30	—	0	0	950	1200	none
SURINAME									
45	Paramaribo	X.1946	abt. 25?	—	1	100	180	170	abundant
46	Paramaribo	X.1946	abt. 25?	—	0	12	550	550	abundant
47	Paramaribo	X.1946	abt. 25?	—	0	0	12	25	abundant
48	Paramaribo	X.1946	abt. 25?	—	0	15	130	160	abundant
49	Paramaribo	23.VIII.1946	abt. 25?	♀	0	0	10	10	few
50	Marîenburg	24.XII.1946	abt. 25?	♂	800	800	380	600	many
51	"Suriname"	—	22	♂	270	240	100	130	few

Ozolaimus megatyphlon (Rudolphi, 1819) Dujardin, 1845

Ascaris megatyphlon RUDOLPHI, 1819, p. 47, 285–286, 761 [Description; "*Lacerta Iguana* (*Iguana tuberculata*). | *Ascaris megatyphlon*. coec." — Locality unknown. — Diagnosis and description present us with some difficulties, especially as regards the description of the oesophagus which leaves the possibility of a mixing up with *O. cirratus*.]

Ozolaimus megatyphlon (Rudolphi) DUJARDIN, 1845, p. 146–147 [Description with measurements; critical remarks on Rudolphi's data; "exemplaires assez nombreux trouvés au Muséum de Paris en août 1841, dans un jeune iguane qui était mort à la ménagerie." — Locality unknown. — Description of new genus *Ozolaimus*, p. 145.].

Oxyuris megatyphlon (Rudolphi) SCHNEIDER, 1866, p. 120, Taf. VII 9 [Short diagnosis; "*Iguana tuberculata*. Coecum."; drawing of caudal part of ♂. — Locality unknown. — "Die Würmer sind schlecht erhalten"; possibly Rudolphi's material, cf p. 27.].

Oxyuris megatyphlon, LINSTOW, 1902, p. 32 [Name only.].

Oxyuris megatyphlon, LINSTOW, 1906, p. 255 [Name only.].

- Ozolaimus megatyphlon*, RAILLIET & HENRY, 1912, p. 252 [Name only].
- Ozolaimus megatyphlon*, RAILLIET & HENRY, 1916, p. 114 [Name only].
- Ozolaimus megatyphlon*, YORKE & MAPLESTONE, 1926, p. 191, fig. 126 [Data from literature, fig. after Schneider.].
- Ozolaimus megatyphlon*, BAYLIS & DAUBNEY, 1926, p. 24 [Name only].
- Ozolaimus megatyphlon*, THAPAR, 1926, p. 69-74, fig. 1-6 [Extensive description with measurements; figures of anterior and posterior parts, with genitalia, of ♂ and ♀. Material from the coecum of Iguana tuberculata. — Locality unknown. — *O. cirratus* and *Macracis monhystera* are to be excluded from synonymy.].
- Ozolaimus megatyphlon*, ORTLEPP, 1933, p. 93-96, fig. 1-6 [Extensive description with measurements; figures of anterior and posterior parts of ♂ and ♀. Material from Iguana tuberculata. — Locality unknown. — Considers *O. cirratus* as belonging to the same species.].
- Ozolaimus megatyphlon*, PEREIRA, 1935, p. 15-17, fig. 19-27 [Extensive description with measurements; figures of entire specimens, anterior and posterior parts of ♂ and ♀, and egg. Material, together with *O. cirratus*, from the "Intestino grosso" of two Iguana tuberculata. — Santa Luzia, Parahyba, northeast Brasil.].
- Ozolaimus megatyphlon*, CABALLERO, 1938, p. 225 [Measurements from material from the coecum of 18 Iguana iguana rhinolopha. — Acapulco, Guerrero, México.].
- Ozolaimus megatyphlon*, DOSSE, 1942, p. 451-452, 461-473, fig. 7-10 [Extensive description with measurements and histological details; figures of apical view of head, section of uterus, and drawings of caudal part of male. Material from coecum of one Iguana specimen, together with *O. cirratus*. — México.].
- Ozolaimus megatyphlon*, LENT & FREITAS, 1948, p. 8-9, fig. 1-2 [Figures of oesophagus and spicule. Material from one Iguana tuberculata, together with *O. cirratus*. — La Puerta, Guárico, Venezuela.].

SHORT DESCRIPTION (measurements according to Table 7) Fig. 27

♂ 2.2-2.8-3.6-5.6-6.3 mm, ♀ 3.1-3.6-5.4-7.6-8.7 mm in length.
 ♂ 9.4-11.3-13.8, ♀ 8.0-10.6-12.3 times as long as wide. Anterior part of oesophagus rather slender; fusiform swelling usually distinctly delimited, its width being about 1/9 the length of this anterior part. Posterior part of oesophagus slender; width of narrow section about 1/15 the length of this posterior part; narrow section abruptly widening into a usually well-defined bulbus. Oesophagus about 2/5 total length; anterior part about 0.7-0.8-0.85 times the length of the posterior part. Tail ♂ 0.11-0.13-0.16 mm long; about 1/25 of total length. Distance vulva-anus 0.64-0.95-1.31 mm, about 1/6 of total length.

DISTRIBUTION. In coecum of *Iguana iguana iguana*; also to be found in colon and rectum: Brasil (Parahyba), Suriname, Venezuelan mainland (Guárico), Colombia (La Goajira), México (Guerrero, Acapulco); Lesser Antilles (Aruba, Curaçao, Bonaire, Blanquilla, Margarita, Los Testigos; Saba).

Ozolaimus cirratus (von Linstow, 1906) Railliet & Henry, 1912

- Oxyuris cirrata* VON LINSTOW, 1906, p. 254–255, Taf. XVIII 15 [Description with measurements; figure of caudal part of ♀. Material “Aus Iguana tuberculata. Intest. crass.” — Locality unknown.].
- Ozolaimus cirratus* (Linstow) RAILLIET & HENRY, 1912, p. 252 [“répondant exactement à la forme ... étudiée par von Linstow”, “intestin de deux ... *Iguana tuberculata*”. — Amérique du Sud.].
- Ozolaimus cirratus* (von Linstow) YORKE & MAPLESTONE, 1926, p. 191 [Name only.].
- (*Ozolaimus*) *cirratus*, THAPAR, 1926, p. 69–70 [Identifies the species with *O. megatyphlon*, probably without having seen any material of *O. cirratus*.].
- Ozolaimus cirratus*, ORTLEPP, 1933, p. 95–96 [Identifies the species with *O. megatyphlon*, basing himself on data from literature.].
- Ozolaimus cirratus*, PEREIRA, 1935, p. 17–21, fig. 28–35 [Extensive description with measurements; figures of entire specimens, anterior and posterior parts of ♂ and ♀, and egg. Material, together with *O. megatyphlon*, from the “Intestino grosso” of two *Iguana tuberculata*. — Santa Luzia, Parahyba, northeast Brasil.].
- Ozolaimus cirratus*, DOSSE, 1942, p. 451–473, fig. 1–6 [Extensive description with measurements and histological details; figures of head, section of uterus, and drawings of caudal part of male. Material from coecum of one *Iguana* specimen, together with *O. megatyphlon*. — México.].
- Ozolaimus cirratus*, LENT & FREITAS, 1948, p. 9, fig. 3–4 [Figures of oesophagus and spicule. Material from one *Iguana tuberculata*, together with *O. megatyphlon*. — La Puerta, Guárico, Venezuela.].

SHORT DESCRIPTION (measurements according to Table 8) Fig. 27

♂ 2.4–2.9–4.7–6.5–7.4 mm, ♀ 2.4–3.1–6.3–9.3–10.1 mm in length. ♀ 8.0–11.3–13.3, ♀ 7.0–8.1–10.4 times as long as wide. Anterior part of oesophagus stout; fusiform swelling usually rather indistinctly delimited, its width being about 1/5 the length of this anterior part. Posterior part of oesophagus stout; width of narrow section about 1/10 the length of this posterior part; narrow section gradually widening into a usually rather indistinctly defined bulbus. Oesophagus about 1/3 total length; anterior part about 0.9–1.0–1.05

times the length of the posterior part. Tail ♂ 0.18–0.23–0.26 mm long; about 1/20 of total length. Distance vulva-anus 0.70–1.47–2.44 mm, about 1/4 of total length.

DISTRIBUTION: In coecum of *Iguana iguana iguana*; also to be found in colon and rectum: Brasil (Parahyba), Suriname, Venezuelan mainland (Guárico), Colombia (La Goajira), México; Lesser Antilles (Aruba, Curaçao, Blanquilla, Margarita, Los Frailes, Los Testigos; St. Eustatius, St.-Barthélemy).

GENERAL REMARKS

In considering Table 6, some attention may be drawn to the following points.
a According to the material to hand, no *Ozolaimus megatyphlon* has yet been found on Los Frailes, St. Eustatius and St.-Barthélemy, and no *O. cirratus* on Bonaire.
b *O. megatyphlon* predominates on Curaçao and Margarita, and *O. cirratus* possibly in Suriname.

c In most of the *Ozolaimus* populations the females are more numerous than the males.

d In certain populations which comprise a very small number of specimens, the dimensions of the specimens appear to be unusually large.

e The occurrence of a large number of specimens of one species of *Ozolaimus* sometimes coincides with a strikingly small number, or complete absence, of the other species.

f In certain cases a very small number of *Ozolaimus* coincides with a very large number of other nematode parasites, and *vice versa*.

It appears to us, however, that further study will be necessary before a more than accidental value can be ascribed to these observations.

An example of individual variation in *O. megatyphlon* and *O. cirratus* within one single population is given in Tables 9 and 10, as regards the length of the first and second parts of the oesophagus. Tables 11 to 13 illustrate the variation of all populations in respect of the above characters, as well as in total length,

maximum width and ratio $\frac{\text{length of first part}}{\text{length of second part}}$ of the oesophagus.

In addition to the material mentioned in Table 6, there are two other finds of *Ozolaimus megatyphlon* to be dealt with. In an *Iguana iguana iguana* from Bahía (♂, size 19 cm), which died in the Amsterdam Zoo, 18.IX.1924, 12 ♂♂ specimens were found (Brunt leg.; in Zool. Mus. Amsterdam). About 35 ♂♂ and 60 ♀♀ specimens were collected from the faeces of a juvenile *Iguana* from Margarita (Porlamar, 27.V.1936; in Mus. Leiden). In both cases the measurements fall nicely within the variation range shown in Table 7.

DISCUSSION OF MEASUREMENTS

The measurements of a number of *Ozolaimus* populations (see Tables 7 and 8) were subjected to statistical treatment. In doing this WILCOXON'S test was applied. $P = 0.05$ was retained as level of significance. All statistical analyses were carried out separately in respect of *O. megatyphlon* and *O. cirratus*, and only as regards total length, $\frac{\text{total length}}{\text{maximum width}}$, and $\frac{\text{length of first part}}{\text{length of second part}}$ of oesophagus.

Each analysis consisted of a comparison of two groups of measurements, e.g. all total lengths of the ♂♂ were compared with those of the ♀♀ within one host; or all total lengths of the ♂♂ from one host with those of the ♂♂ from another host, from the same or another locality. In making these comparisons it was not possible to make use of all hosts; only those could be used in the case of which a suitable number of individuals had been measured. This number was generally 20. In cases in which the number was smaller than 20 in one or both of the two groups for comparison, the comparison was made only if the difference between the two numbers was not more than half the larger number (e.g., the numbers 4-5, 6-8, 10-15 and 10-20 were compared, but not 8-20, 3-20, etc.). In cases in which more than twenty specimens had been measured, 20 were selected from them at random. When the lowest measured value in one group was greater than the highest in the other, the above test was considered unnecessary.

By applying this statistical method an answer was sought to the following three questions, i.e.: are there distinct differences between

1. ♂♂ and ♀♀ within the same host;
2. the populations from different hosts in the same locality;
3. the populations from hosts from different localities?

Re 1.

O. megatyphlon (Populations tested: Nos. 1-2, 6-7, 9-12, 14, 19, 21, 24, 35, 40 and 50)

Even before carrying out any test, distinct differences were observed between ♂♂ and ♀♀ in one and the same host as regards total length, maximum width, length of first part of oesophagus and length of second part of oesophagus. In the ♀♀ the measurements always appeared to be larger than in the ♂♂.

As regards the proportion $\frac{\text{total length}}{\text{maximum width}}$, no difference between ♂♂ and ♀♀ was found in 8 out of the 15 cases; in 6 instances the ratio proved to be smaller in ♀♀ than in ♂♂; and once it was the reverse. These values do not allow us to draw any general conclusion.

The proportion $\frac{\text{length of first part}}{\text{length of second part}}$ of oesophagus in ♂♂ and ♀♀ was the same in 13 out of the 15 cases; in the other two it was smaller in the ♀♀. Therefore, no distinct difference between ♂♂ and ♀♀ exists in this respect.

O. cirratus (Populations tested: Nos. 1-3, 6-7, 9-11, 19, 21, 24, 28, 44-48 and 50)

Just as in the previous case, total length, maximum width, length of first part of oesophagus and length of second part of oesophagus were distinctly greater in the ♀♀ than in the ♂♂.

In 17 out of the 18 instances the proportion $\frac{\text{total length}}{\text{maximum width}}$ proved to be smaller in the ♀♀; once only, no difference could be found. This allows us to conclude that in ♂♂ this ratio is generally larger than in ♀♀.

The proportion $\frac{\text{length of first part}}{\text{length of second part}}$ of oesophagus in ♂♂ and in ♀♀ appeared to be the same in only 12 of the 18 cases; in 5 instances it was larger in ♀♀ than in ♂♂; and once it was the reverse. These values do not allow us to draw any general conclusion.

Re 2.

O. megatyphlon (Populations tested: Nos. 7, 9-11, 19, 21, 24, 40-41, 45-46, 48 and 50)

The localities, populations from which could be compared, were: Curaçao (Nos. 7, 9-11: ♂♂ ♀♀), Margarita (Nos. 19, 21, 24: ♂♂ ♀♀), Saba (Nos. 40-41: ♀♀), and Suriname (Nos. 45-46, 48, 50: ♀♀).

	total length	$\frac{\text{total length}}{\text{maximum width}}$	$\frac{\text{first part}}{\text{second part}}$ oesophagus
Curaçao	distinctly different	distinctly different	distinctly different
Margarita	no difference	no difference	no difference
Saba	no difference	no difference	different
Suriname	distinctly different	distinctly different	slightly different

It can therefore be concluded that in Curaçao and Suriname distinct differences exist between *O. megatyphlon* populations in different hosts. Such differences could not be found in the material from Margarita and Saba.

O. cirratus (Populations tested: Nos. 2-3, 9-11, 21, 24, 40, 42-43, 45-48, 50)

The localities, populations from which could be compared, were: Aruba (Nos. 2-3: ♂♂ ♀♀), Curaçao (Nos. 9-11: ♂♂ ♀♀), Margarita (Nos. 21, 24: ♂♂ ♀♀), Saba (Nos. 40, 42: ♂♂; 40, 43: ♀♀), and Suriname (Nos. 45-48, 50: ♂♂ ♀♀).

	total length	$\frac{\text{total length}}{\text{maximum width}}$	$\frac{\text{first part}}{\text{second part}}$ oesophagus
Aruba	different	no difference	no difference
Curaçao	distinctly different	slightly different	♂♂ not diff., ♀♀ sl. diff.
Margarita	♂♂ not diff., ♀♀ diff.	♂♂ diff., ♀♀ not diff.	different
Saba	no difference	♂♂ not diff., ♀♀ diff.	no difference
Suriname	distinctly different	distinctly different	slightly different

Accordingly, the conclusion may be drawn that in Suriname distinct differences exist between *O. cirratus* populations in different hosts, and only less distinct differences exist in Curaçao. No such differences could be found in the material from Aruba, Margarita and Saba.

Re 3.

It is only possible partly to answer this question, because only those localities in respect of which the number of populations measured is not too small could be used as a standard for comparison. In the case of *O. megatyphlon* these localities are Curaçao and Suriname; in the case of *O. cirratus*, Suriname only. As regards both these localities, the population with the largest measurements, and that with the smallest measurements, were always compared with the populations of every other locality. In this way it has been possible to ascertain whether or not the last-mentioned populations fall within the variation limits of the populations in Curaçao and Suriname.

O. megatyphlon (Populations tested: Nos. 1, 6-7, 9-12, 14, 19, 21, 24, 35, 40-41, 45-46, 48, and 50)

The localities, populations from which could be compared with those from Curaçao (Nos. 7, 9-11) and Suriname (Nos. 50; 45-46, 48 ♀♀ only), were: La Goajira (No. 1), Aruba (No. 6), Bonaire (No. 12), Blanquilla (No. 14), Margarita (Nos. 19, 21, 24), Los Testigos (No. 35), Saba (Nos. 40; 41 ♀♀ only).

In the case of all three values compared, the populations from almost all the last-mentioned localities fall within the range of variation of those from Curaçao and Suriname, as regards both the ♂♂ and the ♀♀. The variations in measurements within the latter two localities are therefore so great that no consistent locality differences can be perceived from the material available.

O. cirratus (Populations tested: Nos. 1-3, 9-11, 21, 24, 35, 38, 40, 42-48, and 50)

The localities, populations from which could be compared with those from Suriname (Nos. 45-48, 50), were: La Goajira (No. 1), Aruba (Nos. 2-3), Curaçao (Nos. 9-11), Margarita (Nos. 21, 24), Los Testigos (No. 35 ♂♂ only), St. Eustatius (No. 38), Saba (Nos. 40, 43 ♀♀ only; 42 ♂♂ only), St.-Barthélemy (No. 44).

Just as in the case of *O. megatyphlon*, no distinct differences could be observed here between the populations from Suriname and those from all other localities.

Accordingly, all this goes to show that the *Ozolaimus* population differences in Curaçao (*megatyphlon*) and in Suriname (*megatyphlon* and *cirratus*) are so great that it is impossible to discern geographical differences.

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TABLE 7.

Measurements in 21 populations of *Ozolaimus*

Iguana Locality	Specimens measured	Population	Total length	Maximum width	Length of first part of oesophagus
1 La Goajira	♂ 50	2400	2.50-3.18-3.79	0.27-0.32-0.38	0.58-0.74-0.83
	♀ 20	1300	3.08-4.34-5.03	0.33-0.42-0.50	0.92-1.08-1.29
2 Aruba	♂ 8	10	2.78-3.21-3.70	0.30-0.33-0.36	0.66-0.75-0.88
	♀ 6	10	3.79-4.84-5.66	0.50-0.55-0.58	0.83-0.93-1.08
3 —	♂ 2	2	3.08 — 3.41	0.27 — 0.29	0.67 — 0.71
6 —	♂ 20	280	2.50-3.28-4.04	0.25-0.29-0.33	0.63-0.74-0.87
	♀ 20	230	4.37-5.79-7.57	0.38-0.52-0.63	0.83-1.03-1.25
7 Curaçao	♂ 10	600	2.83-3.18-3.66	0.29-0.32-0.38	0.65-0.75-0.85
	♀ 15	700	3.41-4.17-5.20	0.36-0.46-0.58	0.87-0.95-1.04
9 —	♂ 20	1300	2.33-2.79-3.29	0.23-0.27-0.31	0.54-0.61-0.71
	♀ 20	2200	3.20-3.62-4.16	0.29-0.36-0.44	0.63-0.71-0.83
10 —	♂ 20	2000	3.25-4.07-4.95	0.27-0.32-0.40	0.71-0.74-0.83
	♀ 20	2500	4.16-5.38-5.95	0.38-0.44-0.50	0.92-0.98-1.12
11 —	♂ 20	310	3.62-3.93-4.29	0.25-0.29-0.33	0.67-0.76-0.83
	♀ 20	650	3.83-4.45-5.03	0.35-0.41-0.49	0.87-1.01-1.12
12 Bonaire	♂ 20	1100	3.41-3.96-4.29	0.29-0.34-0.38	0.65-0.72-0.81
	♀ 20	3400	4.04-4.76-5.03	0.46-0.48-0.52	0.79-0.89-1.00
14 Blanquilla	♂ 50	900	2.16-3.49-4.24	0.17-0.28-0.38	0.58-0.78-0.92
	♀ 50	1200	4.33-4.92-5.74	0.35-0.44-0.48	0.92-1.07-1.19
19 Margarita	♂ 20	310	2.50-3.05-4.24	0.23-0.29-0.44	0.65-0.71-0.83
	♀ 20	220	4.16-4.63-6.62	0.38-0.48-0.67	0.79-0.92-1.12
21 —	♂ 100	600	2.40-3.31-4.80	0.20-0.29-0.58	0.50-0.64-0.84
	♀ 200	1400	3.50-5.01-7.30	0.34-0.51-0.88	0.70-0.84-1.16
24 —	♂ 50	480	2.25-3.22-4.29	0.25-0.30-0.38	0.52-0.71-0.92
	♀ 50	190	3.66-5.24-6.70	0.38-0.49-0.58	0.75-1.00-1.25
35 Los Testigos	♂ 20	50	4.08-4.55-5.16	0.29-0.32-0.35	0.71-0.84-0.92
	♀ 20	45	4.54-5.51-6.66	0.46-0.53-0.63	0.96-1.08-1.21
40 Saba	♂ 20	30	5.20-5.59-6.28	0.38-0.41-0.44	0.75-0.84-0.90
	♀ 20	200	6.33-7.62-8.65	0.63-0.70-0.79	1.04-1.13-1.21
41 —	♀ 10	10	6.20-7.16-7.95	0.60-0.68-0.75	0.96-1.09-1.19
42 —	♂ 1	1	5.70	0.42	0.88
	♀ 3	3	6.90-7.31-8.00	0.65-0.67-0.70	1.00-1.11-1.21
45 Suriname	♂ 1	1	4.74	0.34	0.80
	♀ 20	100	5.41-6.25-7.28	0.46-0.51-0.54	0.92-0.98-1.06
46 —	♀ 12	12	5.62-6.13-6.37	0.46-0.52-0.63	0.87-0.95-1.12
48 —	♀ 14	15	6.41-6.93-7.57	0.54-0.60-0.65	0.87-1.04-1.12
50 —	♂ 20	800	2.91-3.27-3.79	0.29-0.34-0.46	0.63-0.74-0.85
	♀ 20	800	3.41-4.32-5.58	0.50-0.54-0.58	0.87-1.02-1.17
18 Populations	♂ 452		2.16 6.28 2.79-3.61-5.59	0.17 0.58 0.27-0.31-0.41	0.50 0.92 0.61-0.74-0.84
20 Populations	♀ 580		3.08 8.65 3.62-5.42-7.62	0.29 0.88 0.36-0.52-0.70	0.63 1.29 0.71-0.99-1.13

TABLE 7.

megatyphlon from *Iguana iguana iguana*, in mm.

Length of second part of oesophagus	Vulva-anus	Length of tail	Total length		First part oesophagus	
			Maximum width		Second part	
0.67-0.87-1.00 1.12-1.28-1.38	0.53-0.64-0.71	0.11-0.13-0.17	7.35-9.73-12.60 7.70-10.48-13.79		0.71-0.84-0.95 0.75-0.84-0.97	
0.88-0.96-1.04 1.12-1.27-1.42		0.83-0.88-0.93	0.13-0.14-0.15	8.94-9.47-10.28 7.27-8.80-9.76		0.69-0.78-0.85 0.65-0.74-0.82
0.87 - 0.92		0.12 - 0.15	10.27 - 12.21		0.75 - 0.76	
0.71-0.93-1.21 1.04-1.34-1.71	0.58-0.98-1.41	0.09-0.12-0.15	9.64-11.29-16.09 9.74-11.25-14.04		0.70-0.79-0.89 0.65-0.78-0.87	
0.83-0.91-1.00 1.00-1.11-1.24		0.53-0.73-0.95	0.12-0.12-0.13	7.84-9.69-11.44 6.31-8.98-11.64		0.72-0.82-0.91 0.74-0.86-0.92
0.67-0.75-0.92 0.79-0.90-1.12	0.53-0.76-0.95	0.09-0.11-0.14	8.36-10.63-14.00 8.42-10.05-12.87		0.73-0.81-0.89 0.62-0.78-0.88	
0.87-0.96-1.04 1.12-1.27-1.42		0.68-0.97-1.20	0.11-0.14-0.16	10.13-12.47-14.69 9.45-12.23-14.11		0.67-0.77-0.85 0.69-0.78-0.84
0.92-1.04-1.17 1.17-1.37-1.54	0.66-0.83-0.93	0.12-0.14-0.17	11.44-13.23-17.83 9.00-10.87-12.79		0.60-0.74-0.84 0.68-0.78-0.83	
0.87-0.95-1.04 1.08-1.22-1.33		0.78-0.96-1.13	0.12-0.14-0.16	10.32-11.54-14.14 8.33-9.97-10.96		0.69-0.75-0.83 0.68-0.74-0.82
0.66-0.92-1.12 1.08-1.29-1.52	0.63-0.86-1.03	0.11-0.13-0.16	8.69-11.69-14.42 9.69-11.26-13.04		0.69-0.84-0.98 0.71-0.83-0.94	
0.71-0.86-1.10 1.00-1.16-1.50		0.56-0.82-1.20	0.11-0.13-0.15	7.68-10.58-15.55 8.26-10.23-12.38		0.65-0.82-0.94 0.70-0.80-0.92
0.58-0.79-1.12 0.80-1.07-1.54	0.50-0.98-1.40	0.10-0.13-0.16	7.40-11.54-15.40 7.30-9.87-12.00		0.65-0.84-1.00 0.65-0.80-1.10	
0.61-0.85-1.00 0.96-1.29-1.48		0.53-0.96-1.28	0.10-0.13-0.16	8.20-10.58-15.28 8.32-10.89-13.96		0.70-0.85-1.04 0.63-0.78-0.96
1.00-1.10-1.21 1.38-1.47-1.54	0.73-0.88-1.13	0.13-0.15-0.17	12.00-13.79-15.53 9.24-10.51-12.24		0.67-0.77-0.85 0.68-0.73-0.82	
1.06-1.13-1.21 1.42-1.53-1.66		1.11-1.31-1.59	0.13-0.16-0.18	12.38-13.50-16.00 9.82-11.01-13.03		0.64-0.75-0.83 0.65-0.74-0.82
1.48-1.58-1.66	1.01-1.17-1.38		8.86-10.61-11.81		0.64-0.69-0.73	
1.12		0.15	13.57		0.79	
1.54-1.61-1.71	1.11-1.25-1.33		10.06-10.76-11.43		0.63-0.69-0.73	
1.02		0.14	13.94		0.78	
1.17-1.30-1.48	0.93-1.16-1.37		11.00-12.31-14.00		0.69-0.76-0.84	
1.08-1.22-1.46	0.78-0.97-1.15		9.52-11.99-13.65		0.71-0.79-0.87	
1.25-1.39-1.46	1.11-1.30-1.51		10.32-11.76-13.11		0.62-0.75-0.80	
0.83-0.93-1.12 1.12-1.28-1.54	0.42-0.67-0.91	0.12-0.14-0.17	7.84-9.38-10.53 6.45-8.00-9.96		0.66-0.79-0.86 0.73-0.80-0.88	
0.58 1.21 0.75-0.93-1.13			0.09 0.18 0.11-0.13-0.16	7.35 17.83 9.38-11.27-13.79		0.60 1.04 0.74-0.80-0.85
0.79 1.71 0.90-1.30-1.61	0.42 1.59 0.64-0.95-1.31		6.31 14.11 8.00-10.59-12.31		0.62 1.10 0.69-0.77-0.86	

TABLE 8.

Measurements in 25 populations of *Ozolaimus*

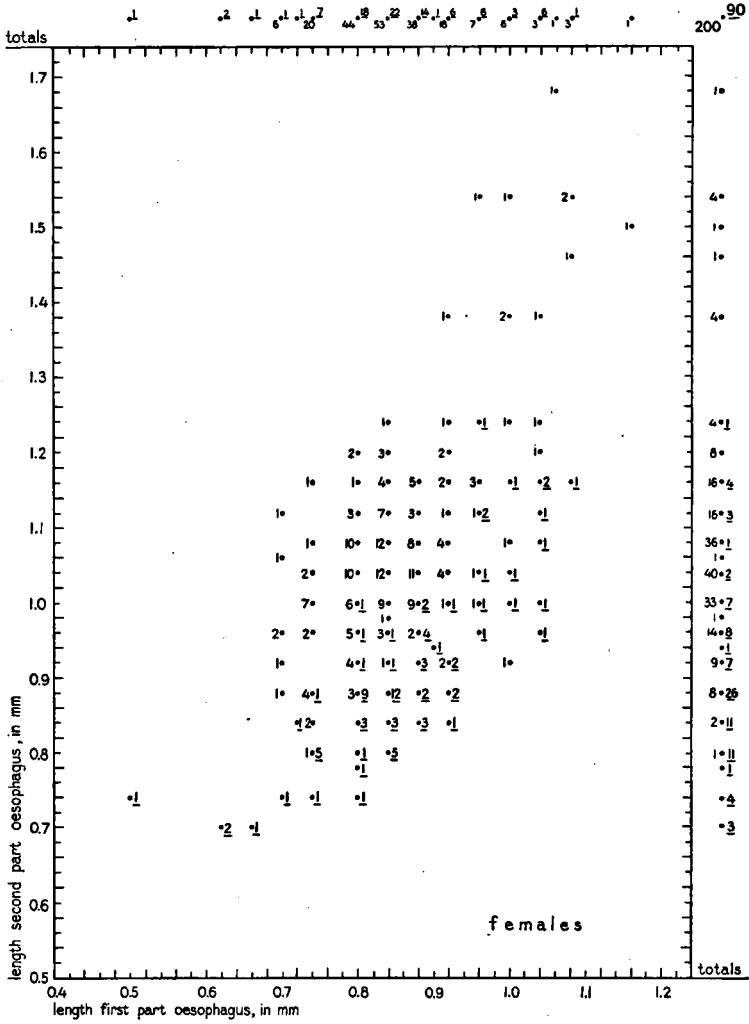
<i>Iguana Locality</i>	<i>Specimens measured</i>	<i>Population</i>	<i>Total length</i>	<i>Maximum width</i>	<i>Length of first part of oesophagus</i>
1 La Goajira	♂ 20	80	2.41-2.85-3.41	0.27-0.33-0.42	0.58-0.69-0.79
	♀ 20	100	2.41-3.12-3.62	0.35-0.46-0.58	0.75-0.88-1.00
2 Aruba	♂ 20	400	3.83-4.22-4.95	0.38-0.40-0.44	0.67-0.76-0.83
	♀ 20	750	5.28-5.89-6.82	0.71-0.79-0.87	0.87-1.00-1.12
3 —	♂ 19	20	3.37-3.75-4.78	0.29-0.35-0.38	0.63-0.70-0.75
	♀ 20	25	3.70-4.52-5.24	0.46-0.60-0.73	0.70-0.91-1.04
6 —	♂ 5	25	3.33-3.74-4.33	0.31-0.40-0.50	0.63-0.76-0.83
	♀ 5	50	5.82-6.17-6.32	0.67-0.75-0.83	0.92-0.98-1.04
7 Curaçao	♂ 8	90	3.29-3.60-4.33	0.30-0.38-0.46	0.71-0.74-0.79
	♀ 7	50	4.20-4.60-5.12	0.46-0.61-0.77	0.90-0.95-1.08
9 —	♂ 20	190	2.62-3.27-3.75	0.25-0.34-0.42	0.54-0.63-0.75
	♀ 20	210	4.16-4.72-6.91	0.48-0.56-0.92	0.69-0.84-1.12
10 —	♂ 20	290	3.87-4.87-5.78	0.34-0.40-0.54	0.65-0.75-0.87
	♀ 20	380	3.49-5.71-6.91	0.42-0.62-0.79	0.75-0.91-1.08
11 —	♂ 20	100	4.12-4.52-5.16	0.33-0.36-0.40	0.63-0.75-0.83
	♀ 20	210	4.37-4.87-5.32	0.48-0.53-0.67	0.85-0.96-1.04
14 Blanquilla	♂ 3	3	4.41-4.49-4.58	0.35-0.37-0.38	0.75-0.78-0.83
	♀ 2	2	6.37 — 6.66	0.58 — 0.67	1.08 — 1.08
19 Margarita	♂ 4	10	3.54-4.40-4.78	0.38-0.40-0.46	0.75-0.79-0.84
	♀ 5	10	4.87-5.14-5.91	0.58-0.65-0.75	0.96-1.02-1.08
21 —	♂ 34	45	3.10-4.40-5.40	0.30-0.38-0.54	0.54-0.66-0.80
	♀ 90	130	3.90-5.49-7.70	0.42-0.67-1.10	0.50-0.85-1.08
24 —	♂ 14	15	3.58-4.18-4.74	0.33-0.38-0.42	0.67-0.79-0.96
	♀ 12	25	3.83-4.66-5.66	0.50-0.56-0.67	0.92-1.01-1.12
34 Los Frailes	♂ 1	1	7.16	0.50	0.80
	♀ 2	2	9.65 — 10.11	0.90 — 1.00	1.25 — 1.33
35 Los Testigos	♂ 13	20	5.24-5.59-6.49	0.40-0.44-0.50	0.75-0.81-0.83
	♀ 6	10	6.41-7.06-7.86	0.79-0.88-0.92	1.08-1.12-1.21
38 St Eustatius	♂ 20	250	3.99-5.13-5.62	0.33-0.43-0.46	0.75-0.87-0.96
	♀ 20	650	5.99-6.83-7.53	0.58-0.66-0.75	0.96-1.07-1.12
40 Saba	♂ 7	8	5.49-5.83-6.24	0.48-0.51-0.54	0.83-0.84-0.85
	♀ 13	15	7.61-8.20-8.65	0.87-0.95-1.04	1.00-1.13-1.21
41 —	♂ 1	1	6.07	0.52	0.79
	♀ 3	3	8.53-8.63-8.74	0.92-0.98-1.08	1.12-1.18-1.21
42 —	♂ 10	10	5.20-5.71-6.28	0.42-0.48-0.52	0.75-0.83-0.87
	♀ 4	4	7.54-8.39-9.20	0.88-1.00-1.08	1.08-1.14-1.18
43 —	♀ 20	40	5.70-7.75-9.24	0.67-0.75-0.98	1.04-1.16-1.27
44 St-Barthélemy	♂ 20	950	5.70-6.46-7.40	0.44-0.49-0.52	0.79-0.85-0.96
	♀ 20	1200	7.28-7.70-8.36	0.71-0.82-0.96	1.04-1.17-1.33
45 Suriname	♂ 20	180	5.53-6.21-6.99	0.42-0.48-0.54	0.71-0.81-0.92
	♀ 20	170	7.28-8.22-9.03	0.83-0.89-1.04	0.98-1.03-1.19
46 —	♂ 20	550	3.95-4.70-5.49	0.31-0.39-0.46	0.69-0.78-0.92
	♀ 20	550	5.58-6.43-7.74	0.58-0.67-0.75	0.83-0.99-1.08
47 —	♂ 10	12	5.70-6.12-6.62	0.42-0.47-0.50	0.75-0.79-0.83
	♀ 20	25	8.36-9.33-10.01	0.85-0.95-1.19	1.04-1.13-1.25
48 —	♂ 20	130	4.29-4.75-5.28	0.40-0.41-0.42	0.71-0.81-0.92
	♀ 20	160	5.03-5.86-7.40	0.58-0.70-0.79	0.87-1.03-1.12
50 —	♂ 20	380	2.91-3.63-4.54	0.35-0.40-0.50	0.71-0.82-0.92
	♀ 20	600	4.04-4.79-5.87	0.58-0.67-0.75	0.96-1.07-1.17
24 Populations	♂ 349		2.41 7.40 2.85-4.66-6.46	0.25 0.54 0.33-0.41-0.51	0.54 0.96 0.63-0.77-0.87
25 Populations	♀ 429		2.41 10.11 3.12-6.26-9.33	0.35 1.19 0.46-0.73-1.00	0.50 1.33 0.84-1.02-1.18

TABLE 8.

cirratus from *Iguana iguana iguana*, in mm.

Length of second part of oesophagus	Vulva-anus	Length of tail	Total length		First part Second part		oesophagus
			Maximum	width	Second part	oesophagus	
0.58-0.67-0.73 0.79-0.87-1.00	0.53-0.70-0.98	0.15-0.18-0.20	6.74-8.03-11.07	8.67	0.84-1.04-1.33	1.01	1.14
			5.04-6.96-8.67		0.89-1.01-1.14		
0.75-0.80-0.87 0.83-0.98-1.12	1.15-1.49-1.88	0.21-0.24-0.27	9.10-10.54-12.40	9.22	0.88-0.94-1.05	1.02	1.10
			6.14-7.48-9.22		0.96-1.02-1.10		
0.67-0.73-0.81 0.75-0.89-1.00	0.91-1.08-1.46	0.20-0.22-0.25	8.89-10.71-12.71	8.72	0.85-0.95-1.06	1.03	1.19
			6.31-7.58-8.72		0.93-1.03-1.19		
0.70-0.82-0.92 0.92-1.04-1.12	1.08-1.43-1.66	0.22-0.24-0.27	8.13-9.27-10.38	8.91	0.89-0.93-0.96	1.05	1.00
			7.52-8.29-8.91		0.92-0.95-1.00		
0.69-0.75-0.83 0.83-0.93-1.08	1.08-1.21-1.42	0.22-0.23-0.25	7.22-9.45-11.07	9.87	0.88-0.99-1.08	1.03	1.09
			5.72-7.79-9.87		0.92-1.03-1.09		
0.58-0.66-0.75 0.75-0.89-1.21	0.95-1.27-1.83	0.18-0.21-0.25	7.47-9.54-10.92	9.72	0.86-0.97-1.07	1.02	1.11
			6.71-8.53-9.72		0.85-0.95-1.11		
0.67-0.80-0.96 0.75-0.93-1.10	0.83-1.34-1.63	0.22-0.25-0.28	9.27-12.02-14.68	10.41	0.80-0.93-1.08	1.09	1.10
			7.61-9.31-10.41		0.93-0.99-1.10		
0.69-0.82-0.96 0.85-0.96-1.04	0.98-1.11-1.35	0.18-0.22-0.24	11.25-12.42-13.58	10.08	0.83-0.92-1.08	1.00	1.09
			8.06-9.13-10.08		0.94-1.00-1.09		
0.73-0.81-0.87 1.08-1.12	1.28-1.43	0.18-0.20-0.23	11.61-12.17-13.09	11.50	0.90-0.96-1.05	1.02	1.00
			9.51-11.50		0.96-1.00		
0.75-0.82-0.88 1.00-1.02-1.06	0.96-1.04-1.10	0.20-0.23-0.24	9.32-10.88-12.26	9.52	0.84-0.97-1.05	1.00	1.02
			6.13-7.96-9.52		0.92-1.00-1.02		
0.62-0.70-0.84 0.70-0.90-1.24	0.90-1.24-1.90	0.17-0.20-0.25	8.80-11.76-14.00	10.30	0.80-0.95-1.05	1.05	1.10
			6.50-8.33-10.30		0.76-0.95-1.10		
0.63-0.77-0.92 0.87-0.99-1.17	0.73-0.93-1.08	0.18-0.22-0.26	9.55-10.91-11.63	9.32	0.86-1.02-1.25	1.03	1.13
			6.61-8.26-9.32		0.96-1.03-1.13		
1.00 1.21-1.29	2.36-2.37	0.24	14.32	10.78	0.80	1.03	1.03
			10.13-10.78		1.03-1.03		
0.79-0.85-0.92 1.08-1.12-1.17	1.48-1.57-1.66	0.22-0.24-0.27	11.08-12.59-14.09	8.54	0.88-0.95-1.05	1.00	1.04
			7.04-7.83-8.54		0.96-1.00-1.04		
0.85-0.93-1.04 0.96-1.11-1.25	1.28-1.53-1.98	0.23-0.26-0.28	10.41-11.88-13.10	12.00	0.85-0.94-1.04	1.04	1.08
			8.70-10.33-12.00		0.88-0.97-1.08		
0.85-0.88-0.92 1.00-1.13-1.23	1.41-1.93-2.39	0.23-0.26-0.28	10.78-11.52-12.48	9.32	0.93-0.96-0.98	1.00	1.08
			7.92-8.65-9.32		0.95-1.00-1.08		
0.90 1.12-1.23-1.31	1.83-1.93-2.13	0.28	11.69	9.37	0.89	1.06	1.00
			7.89-8.85-9.37		0.91-0.96-1.00		
0.80-0.86-0.90 1.08-1.14-1.20	1.74-2.07-2.39	0.23-0.25-0.27	10.56-11.81-14.96	8.57	0.84-0.96-1.02	1.00	1.04
			8.25-8.41-8.57		0.96-1.00-1.04		
1.00-1.18-1.29	1.16-1.70-2.32		8.33-10.38-12.91		0.93-0.98-1.04		
0.87-0.96-1.02 1.17-1.26-1.35	1.38-1.72-2.03	0.23-0.26-0.28	11.40-13.06-14.23	11.06	0.84-0.89-0.96	1.04	1.08
			8.02-9.49-11.06		0.84-0.94-1.08		
0.71-0.86-0.94 0.92-1.10-1.25	1.26-1.94-2.89	0.20-0.24-0.30	10.70-13.02-15.86	10.74	0.88-0.96-1.06	1.04	1.09
			7.81-9.19-10.74		0.93-0.98-1.09		
0.67-0.76-0.87 0.90-0.99-1.12	1.08-1.58-2.27	0.20-0.22-0.26	10.38-12.08-14.00	11.13	0.90-1.02-1.11	1.02	1.09
			8.39-9.74-11.13		0.92-0.99-1.09		
0.75-0.79-0.83 1.06-1.13-1.23	1.78-2.44-2.89	0.22-0.24-0.27	12.39-13.26-14.39	11.12	0.93-1.00-1.08	1.00	1.07
			8.05-9.81-11.12		0.92-1.00-1.07		
0.71-0.80-0.85 0.92-1.02-1.08	1.00-1.28-1.78	0.22-0.24-0.28	10.70-11.42-12.90	10.41	0.90-1.00-1.11	1.02	1.09
			7.03-8.53-10.41		0.92-1.02-1.09		
0.67-0.81-0.96 0.87-1.07-1.17	0.83-1.21-1.91	0.20-0.23-0.28	7.56-9.10-10.53	8.88	0.92-1.01-1.10	1.01	1.09
			6.30-7.23-8.88		0.93-1.01-1.09		
0.58-1.04 0.66-0.80-0.96	0.53-2.89 0.70-1.47-2.44	0.15-0.30	6.74-15.86	13.26	0.80-1.33	1.04	1.03
		0.18-0.23-0.26	8.03-11.25-13.26		0.89-0.97-1.04		
0.70-1.35 0.87-1.04-1.26			5.04-12.91	10.38	0.70-1.19	1.03	1.03
			6.96-8.09-10.38		0.94-0.99-1.03		

TABLE 9.



Variation in ♀ *Ozolaimus* as regards length of first and second part of oesophagus. Specimens of one single population: No. 21. — Numbers of specimens of *megatyphlon* not underlined, of *cirratum* underlined. (Approximate values.)

TABLE 11.

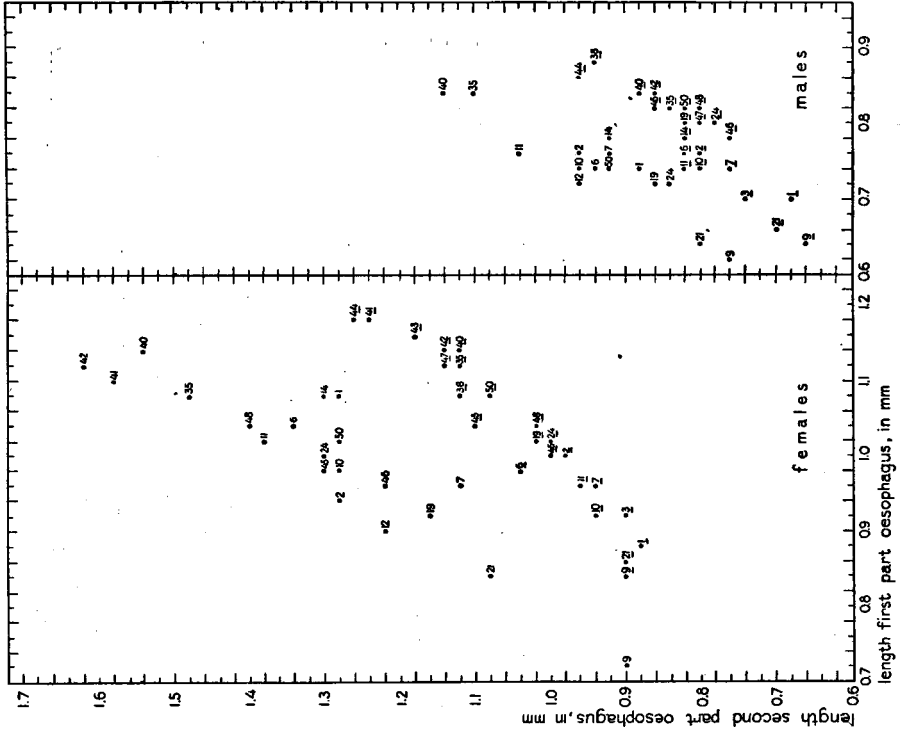
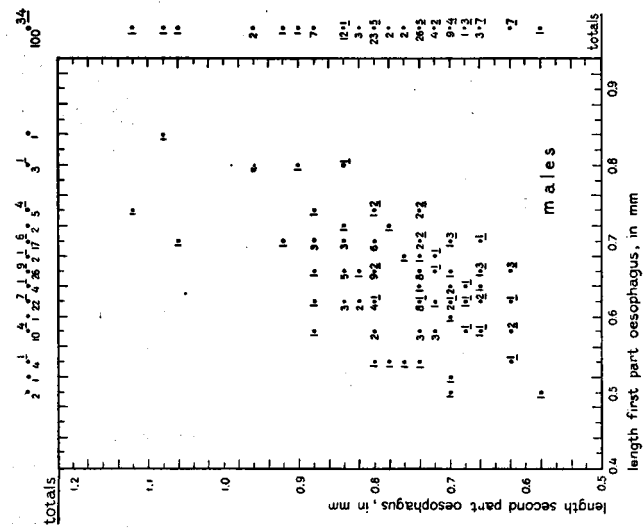


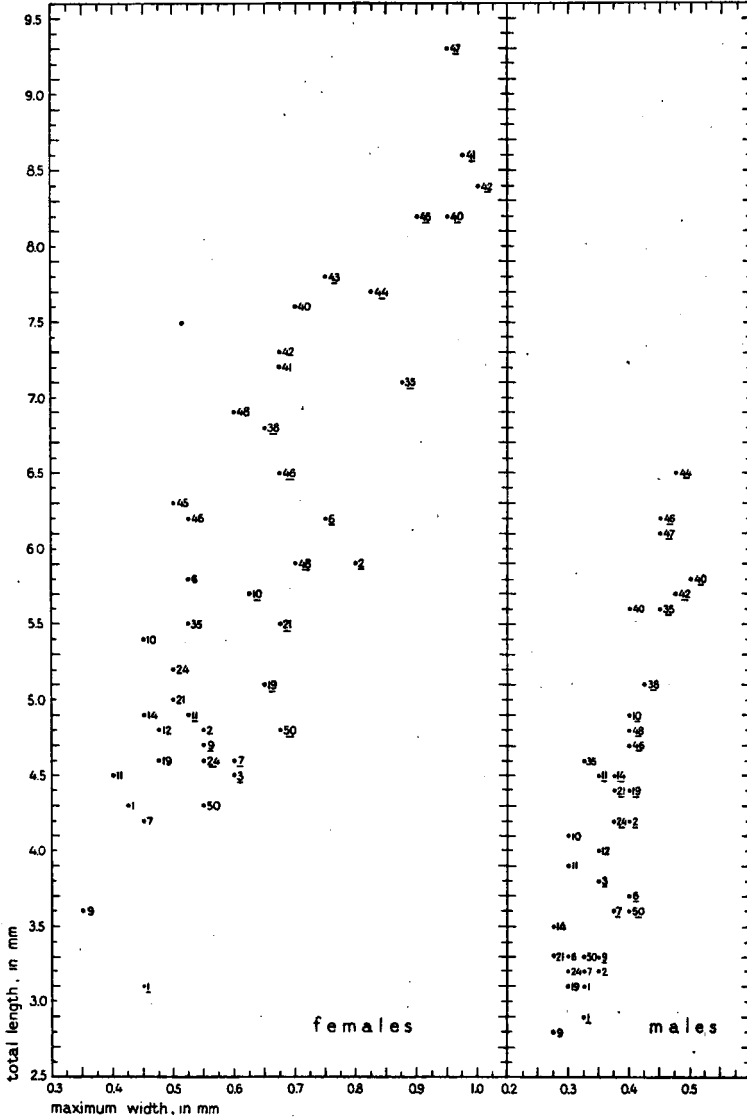
TABLE 10.



Variation in ♂ *Ozolaimus* as regards length of first and second part of oesophagus. Specimens of one single population: No. 21. — Numbers of specimens of *megatyphlon* not underlined, of *cirratus* underlined. (Approximate values.)

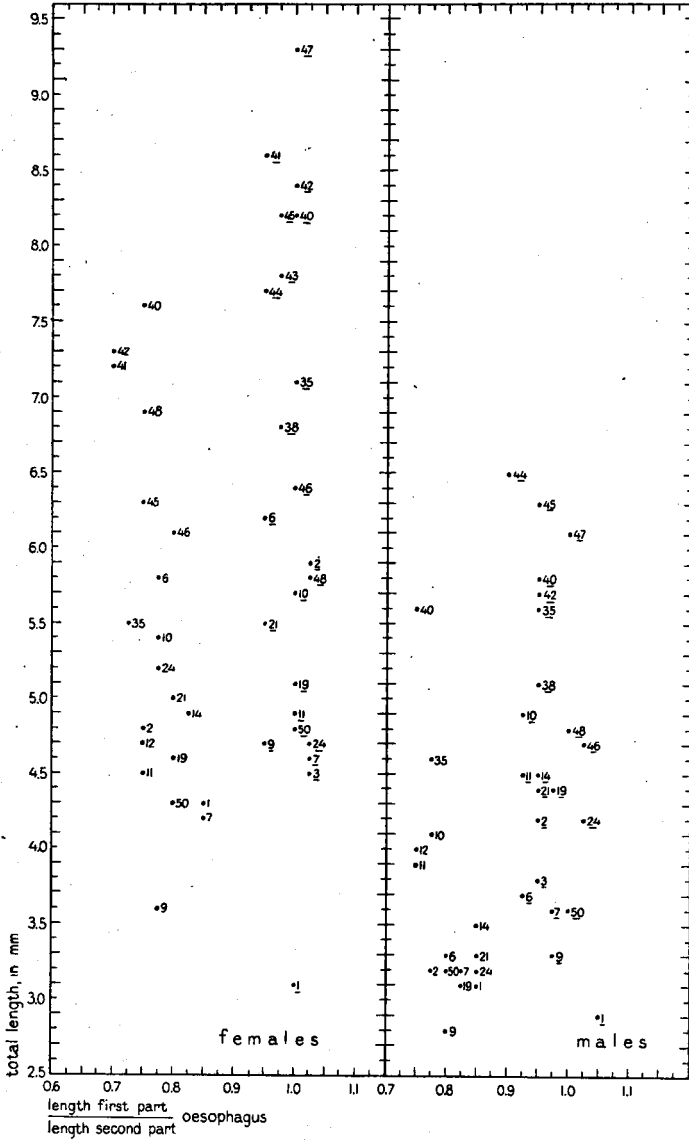
Variation in *Ozolaimus* populations as regards average length of first and second part of oesophagus. — Populations of *megatyphlon* not underlined, of *cirratus* underlined. See Table 7-8. (Approximate values.)

TABLE 12.



Variation in *Ozolaimus* populations as regards average total length and maximum width. — Populations of *megatyphlon* not underlined, of *cirratu*s underlined. See Table 7-8. (Approximate values.)

TABLE 13.



Variation in *Ozolaimus* populations as regards average total length and ratio $\frac{\text{length first part}}{\text{length second part}}$ oesophagus. — Populations of *megatyphlon* not underlined, of *cirratus* underlined. See Table 7-8. (Approximate values.)