

REPORT ON THE FISHES TAKEN IN MADEIRAN
AND CANARIAN WATERS DURING THE
SUMMER-AUTUMN CRUISES OF THE
«DISCOVERY II» 1959 and 1961

I. THE CERATIOID FISHES
(MELANOCETIDAE, HIMANTOLOPHIDAE, ONEIRODIDAE,
GIGANTACTINIDAE, LINOPHRYNIDAE)

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With 6 figures in text

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1) Museu Municipal do Funchal, Madeira.

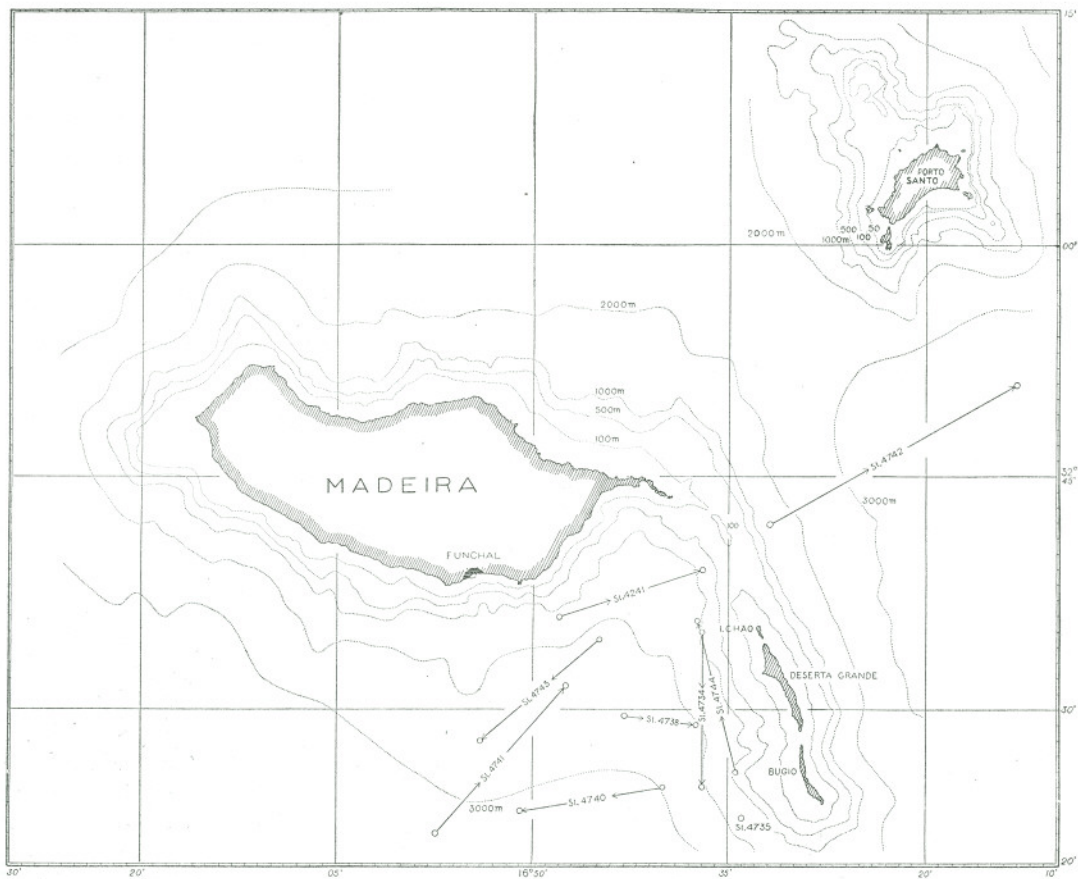


Fig. 1. — Stations of Madeiran area from the «Discovery II» Summer-Autumn Cruises 1959 and 1961.

LIST OF THE 11 STATIONS CONCERNED WITH THE CATCHES OF THE WHOLE MATERIAL TO BE TREATED IN THIS REPORT

Station	Date	Gear	Depth (m.)	Shot	All out	Haul	All in	Position
4241	3.IX.59	IKMT	900-0	0638	0731	0845	0955	32° 36'N, 16°48'W to 32°39'N, 16°37'W
4244	3.IX.59	IKMT	125-0	2025	2045	2345	2359	32° 26'N, 16°34 1/2'W to 32°35 3/4'N, 16°37 1/2'W
4255	23.IX.59	IKMT	1000-0	1620	1708	1925	2016	36° 31'N, 11°24'W to 36°22'N, 11°15 1/2'W
4734	17.IX.61	IKMT	mean 810 max. 850	1115	1220	1420	1520	Bucket I 810-(700), Bucket II 700-0 32°35'N, 16°37'W to 32°25'N, 16°37'W
4735	17.IX.61	IKMT	Bucket I 240-100 Bucket II 100-65-(0)	1851	<i>1909-1950</i> (oblique haul) <i>1950-2020</i> (horizontal haul at 65m)	2020	2028	32°23'N, 16°34'W
4738	18.IX.61	BCMT	max. 175	1427	1530	1725	1809	32°29 1/2'N, 16°43'W to 32°29'N, 16°37 1/2'W
4740	19.IX.61	IKMT	2500-(0)	0945	1155	1455	1700	32°25'N, 16°40'W to 32°23 1/2'N, 16°51'W
4741	19.IX.61	BCMT	100-(0)	1850	<i>1939</i>	<i>2308</i>	<i>2330</i>	32°22'N, 16°57 1/2'W to 32°31 1/2'N, 16°47 1/2'W
4742	20.IX.61	IKMT	1700-(0)	0800	1000	1300	1450	32°42'N, 16°32'W to 32°51'N, 16°13'W
4743	20.IX.61	BCMT	170-(0)	2010	<i>2122</i>	<i>2345</i>	<i>0025</i>	32°34 1/2'N, 16°45'W to 32°28'N, 16°54'W
4758	30.IX.61	BCMT	170-(0)	2210	<i>2321</i>	<i>0220</i>	<i>0300</i>	28°01'N, 16°46 1/2'W to 28°12'N, 16°56'W

IKMT — Isaacs - Kidd Midwater Trawl
BCMT — British Columbian Midwater Trawl

Italics — after sunset

I. INTRODUCTION

In the collection of fishes taken in various depths in the neighbourhood of Madeira and the Canaries the Ceratioid fishes are only poorly represented. In all only 7 specimens were taken, 5 of which in a haul at station 4742, one at station 4743 and one at station 4758. This scanty material, however, proved highly interesting in that it contained two specimens of a species new to science, 3 new to the area, and for the first time free-living males taken in Madeiran waters.

The bulk of the material is derived from 11 stations, at which a total of 6970 fish were taken. From the Canarian area only one haul is included. This haul, however, had yielded 3603 out of the afore-mentioned total.

Though only 3 stations are involved in this account the total is given here to serve also for future consultation in connection with the other groups to be treated later.

This important material is the first derived from catches made with Isaacs-Kidd Midwater Trawl or British Columbian Midwater Trawl to come into the possession of the Funchal Municipal Museum, whose collection of fishes has thus been greatly enriched, and I would like to take this opportunity to offer my most sincere thanks to the British National Institute of Oceanography for the generous decision to present it to us and for giving me personally the opportunity to examine it.

II. SYSTEMATIC ACCOUNT

Family 1. *Melanocetidae*

Genus *Melanocetus* Günther

1. *Melanocetus johnsoni* Günther

Fig. 2.

Melanocetus johnsoni Günther. Maul, 1961, Bol. Mus. Mun. Funchal, No. XIV, Art. 59, p. 91, fig. 1. *

Material

One male metamorphosing stage, in good condition, station 4742, MMF Reg. No. 19022.

* For full synonymy of males see Bertelsen (Dana-Rep. 39)

Description

Total length 20.5mm.; standard length 14mm. Dorsal 15; pectorals ?/19; denticles on snout 8, on lower denticular 12; olfactory lamellae 12.

Skin naked and covered with dark brown pigmentation. Posterior nostril contiguous with eye. Pupil round and the eye without aphacic space. To see the inner pigmentation clearly the skin was cut longitudinally along the sides. The clearness with which this pigmentation is shown in the figure is exaggerated. Its distribution on the body is typi-

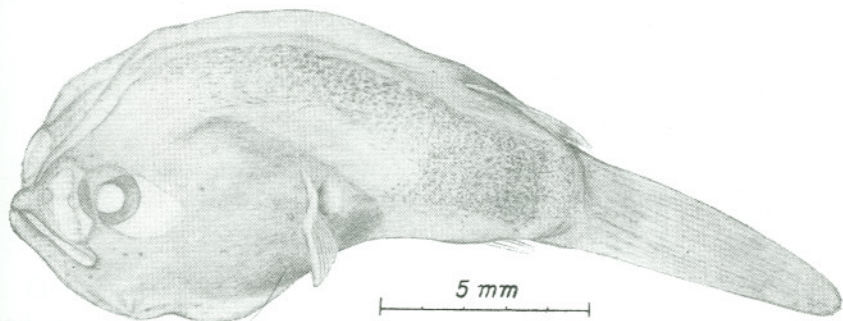


Fig. 2. — *Melanocetus johnsoni*; Reg. No. 19022

cal of *Melanocetus johnsoni* and is almost identical with that of a male metamorphosing stage of practically the same size, figured by Bertelsen (1951, Fig. G, p. 50).

To make certain of the count of the dorsal the skin covering this fin was cut along its base and the rays were treated with alizarin. In the case of the pectorals it was necessary to amputate one and treat it with alizarin as both were closed and twisted in such a way that a reliable count *in situ* would have been impossible.

2. *Melanocetus murrayi* Günther

Fig. 3.

Melanocetus murrayi Günther, 1887, Rep. Sci. Res. Voy. Challenger Zool., vol. XXII, p. 57, Pl. XI, Fig. A. *

Material

One male metamorphosing stage, in good condition, station 4742, MMF Reg.No. 19023.

* For full synonymy of males see Bertelsen (Dana-Rep.39)

Description

Total length 14.5 mm., standard length 10mm. Dorsal 13; pectorals 16/16; denticles on snout 6 or 7, lower denticular 9 or 10, olfactory lamellae 11.

Skin naked and covered with dark brown pigmentation, very slightly transparent. The clearness of the inner pigmentation on the drawing is exaggerated. To examine this a longitudinal cut was made along one

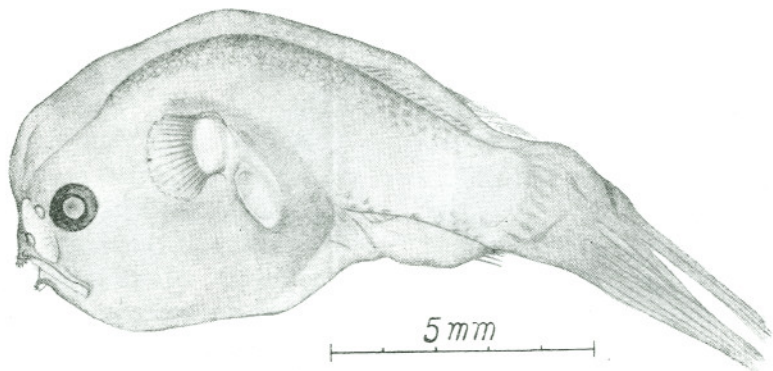


Fig. 3. — *Melanocetus murrayi*; Reg. No. 19023

side of the body. The eye has a wide aphacic space. The posterior nostril is contiguous to the eye,

To ensure precise counts of the fin rays the latter were stained with alizarin. The left pectoral is spread so conveniently for counting that this could be done easily and with accuracy.

Remarks

The counts of the fin rays, the arrangement of the subdermal pigmentation and the presence of an aphacic space decidedly distinguish this specimen from *M. johnsoni* on one hand and, on the other, range it with *M. murrayi*, to which it must consequently be referred. The pectoral count of 16 is outside the range of variation found on copious material of *M. johnsoni* composed of larvae, females and males. The denticular teeth are less in number than given for the males of *M. murrayi* in Bertelsen's key

(1951, Dana-Rep. 39, p. 44), but on page 47 he mentions an adolescent male of 14 mm. standard length in which the median row of 3 to 5 denticles is not developed.

Of the 6 specimens belonging to the genus *Melanocetus* previously recorded by the author (1961, p.90) only 3 could with certainty be referred to *M. johnsoni*, while the other 3 were too badly damaged for specific identification. The present one is, therefore, the first certain representative of *M. murrayi* in the collection of the Museum.

Family 2. *Himantolophidae*

Genus *Himantolophus* Reinhardt

Himantolophus sp.

Himantolophus sp. Maul, 1962, Bol. Mus. Mun. Funchal, No. XVI, Art. 54, p. 11.

Material

One male specimen, station 4758, MMF Reg.No. 19343. In very good condition, S.L. 12mm., T.L. 17.5 mm.

The specimen is of the type without a pigmented hump and agrees well with one of 13 mm. total length shown by Bertelsen (1951) in Fig. 23D, except for having much more dermal pigmentation under the gill opening. This, however, is to be expected as it is considerably larger.

Family 3. *Oneirodidae*

Genus *Lasiognathus* Regan

Lasiognathus ancistrophorus sp. n.

Figs. 4-6.

Material

Two female specimens from station 4742: one, MMF Reg.No. 19019 (type), fair condition, S.L. 55.5 mm.; one, MMF Reg.No. 19020 (paratype), fair condition, S.L. 34 mm.

Description of type

On the sides of the head and snout some of the skin is missing,

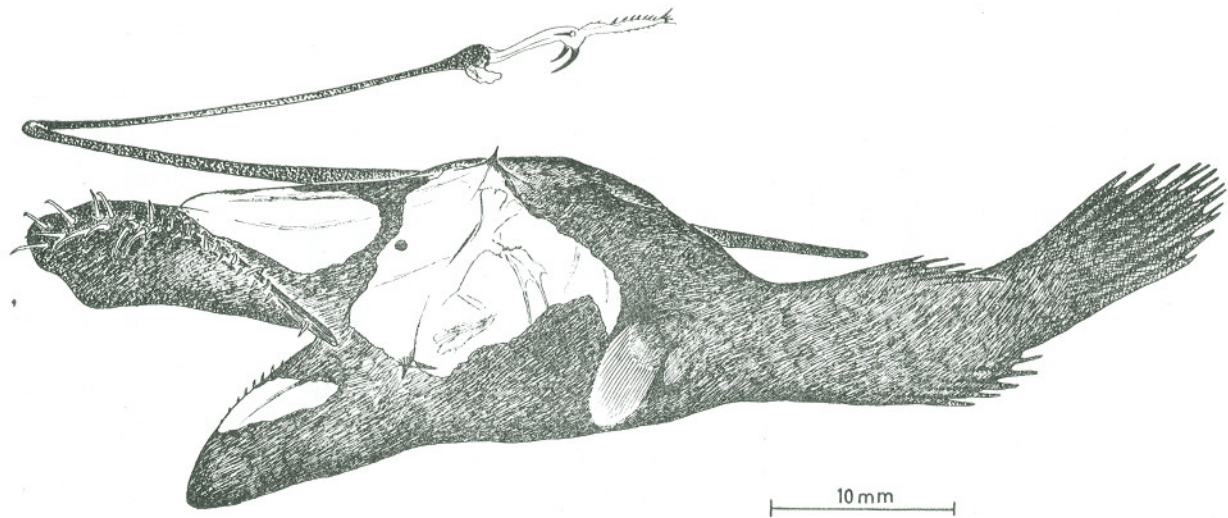


Fig. 4. — *Lasiognathus ancistrophorus* sp. n., type; Reg. No. 19019

thus showing the shape of the opercular bones without further dissection. All parts, including the more or less delicate distal appendage of the luminous bulb, well preserved.

Measurements (in mm.). Total length 66; standard length 55.5; premaxillary 19.5; lower jaw 17.5; distance from tip of snout to point of sphenotic spine 27, to upper meeting points of posttemporal and supra-cleithrum 32.5; distance between points of sphenotic spines 10.5; operculum 5.7/5.7; suboperculum 2.2/2.4; illicium 26; basal bone 48; longest tooth in upper jaw 4.3.

Counts. Dorsal 5; anal 5; pectorals 19/18; caudal 9.

Teeth. In the upper jaw 31/33 and in the lower 26/25. They vary greatly in size, the larger ones being moderately long.

Luminous bulb. (Fig. 5B). The black pigment of the illicium reaches anteriorly up to about 4/5 and posteriorly to about 1/5 of the

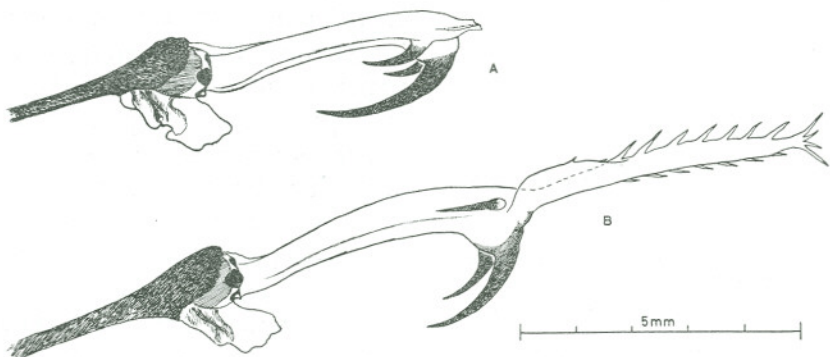


Fig. 5. — *Lasiognathus ancistrophorus*. A esca of paratype; B esca of type.

subspherical bulb. Looked at from the distal end slightly from below, the black pigment blotches, underlying the skin that covers the transparent distal part of the bulb, form a cross. The blotches to either side are broad and more or less pear-shaped, with the broader ends to the inside, the anterior and posterior blotches are heart-shaped, with the broader parts outward. The posterior one has two white areas in the lower lobes of the heart and between these and the upper point a papilla-like elevation. A sturdy subcylindrical stem springs from the distal end of the bulb, bearing at its end 3 large, strong, claw-like hooks which are only slightly

curved, all 3 pointing directly backwards. The middle one is the strongest and is situated on the posterior side, whereas the two smaller ones are lateral, slightly posterior. Their colour is black. At the end of this stem there is a further appendage nearly as long as the stem. It is slightly depressed and along either side has 8 to 9 filaments, the penultimate ones much longer than the others. Near its base there is a wing on either side. On the lower side of the luminous bulb there is a compressed wing-shaped appendage which is conspicuously thickened along its lower half. The pore of the bulb is situated just above the angle formed by this appendage and the lower surface of the bulb.

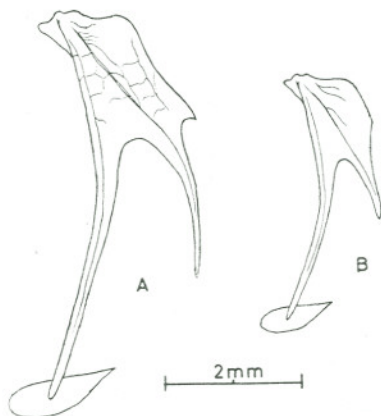


Fig. 6. — *Lasiognathus ancistrophorus*.
A opercular bones of type; B opercular bones of paratype.

of the upper unbranched portion, there are ridges with irregular less elevated ones between their upper portions.

The suboperculum is small, pear-shaped with a pointed end.

Description of the paratype

This specimen has lost a large amount of its skin on the left side and also most of the appendage beyond the hooks of the esca (Fig. 5A) is broken off. Apart from these damages, however, it is in good condition.

The shape and disposition of the teeth, and the formation and pigmentation of the luminous bulb are identical with those of the type.

The opercular bones (Fig. 6B) are also more or less the same, except that the posterior outline does not end in a point as in the type.

Proportions in per cent of total length, as well as counts of fin rays and teeth, of the type and the paratype

	<i>Type</i>	<i>Paratype</i>
Total length	66mm.	41.5mm.
Premaxillary	29.2	29.4
Lower jaw	26.5	27.2
Tip of snout to point of sphenotic spine	40.9	39
Tip of snout to upper meeting points of posttemporal and supraclathrum	49.2	43.3
Distance between points of sphenotic spines	15.9	20.9
Operculum	8.6	8.9
Illicium (to end of bulb)	39.5	37.3
Basal bone	72.7	67.5
Longest tooth of upper jaw	6.5	6.5
<i>Counts</i>		
Dorsal	5	5
Anal	5	5
Pectorals	19/18	17/17
Caudal	9	9
Teeth in upper jaw	31/33	19/19
Teeth in lower jaw	26/25	?/15

Remarks

In comparing these two specimens with each other we see that there is very little variation in the proportions, except in that of the measurement between the points of the sphenotic spines. This, however, is in agreement with the ontogenetic development of these bones in other species. The proportional length of the largest teeth is exactly the same in both, in spite of considerable difference in size of the specimens. This fact is of special interest as in the previously described specimens this proportion differed considerably in all three. Parallel with progressive increase in absolute size of the specimens there was a progressive decrease of tooth length in relation to body length. On the other hand, the general increase in number in the larger ones of these specimens is the same here, and it becomes clear that this value can be used as a specific character if considered in relation to body size, whereas the increase in dentition does not seem to effect the length of the teeth in this new species, and possibly in all species of the genus.

From *Lasiognathus saccoctoma*, *L. beebei* and «*Lasiognathus* sp.» (Maul, 1961) this new species is mainly distinguished by the formation of the esca. Due to the very different complex structure of this organ it would be quite impossible to confuse it with any of the other species. Though we have hooks here that are not inserted directly on the esca as in *L. saccoctoma*, the structure they are placed on is not a filament as in that species, but a sturdy, comparatively short stem. There is also no inferior appendage on the bulb or terminal filament in *L. saccoctoma*, and the hooks are quite small and directed forward.

The operculum differs from that of *L. saccoctoma* and «*L. sp.*» by its great broadness of the upper unbranched part.

Proportional differences are hardly great enough to be used as reliable distinguishing characters, all the more so as many are variable due to the soft consistency of these fishes. The very far backward position of the posttemporal-supracleithral hump in the unnamed species (Maul, 1961) is, however, a character of significance in this respect and rather removes this specimen from all others.

Though the discovery of this new species does not enable us to come to a definite decision about «*Lasiognathus* sp.», the resemblance of the esca of both specimens (in all its complex details) indicates that this character is likely to be of reliable diagnostic importance in this genus and that *Lasiognathus beebei* is in all probability distinct from *L. saccoctoma*.

The specific name *ancistrophorus* from Greek *áncistrón* hook + *phoréo* I bear.

Family 4. *Gigantactinidae*

Genus *Gigantactis* Brauer

Material

One female larval specimen, station 4743, MMF Reg. No. 19344. Condition poor. S.L. 7.2 mm.

The right pectoral fin is missing and the skin is damaged in several places. However, a reliable count of the existing fins could be made with the following result: Dorsal 6; anal 6; pectoral 21; caudal 9. The

pectoral is very large, its rays reaching the end of the caudal peduncle. There is a strong and distinct inner pigmentation on the back and the upper three quarters of the peritoneum. All over the skin there are numerous minute pigment spots. The illicium is distally thickened and is, seen from above, circular and has a median conical elevation.

In spite of its poor condition the specimen can easily be referred to *Gigantactis* on account of its large pectoral fin. Its pigmentation range it with the specimens defined as Type A by Bertelsen (1951, p. 148). In size it is between the two specimens of his figures 99 B and 99 C. In neither of these do the pectorals quite reach the end of the caudal peduncle but the fact that this is the case in the present specimen, may be due to a twist downwards and somewhat to the left of the caudal peduncle.

Family 5. *Linophrynidae*

Genus *Edriolychnus* Regan

Edriolychnus schmidti Regan

Edriolychnus schmidti Regan. Maul, 1961, Bol. Mus. Mun. Funchal, No. XIV, Art. 50, p. 155, fig. 32.

Material

One female specimen, station 4742, MMF Reg.No. 19021. In very good condition. S.L. 30 mm.

This specimen agrees well with the previously recorded one from stomach of *Aphanopus carbo* but has 16 pectoral rays in both fins instead of 15.

III. SUMMARY

Seven specimens of Ceratioid fishes derived from hauls in Madeiran and Canarian waters are examined. For the first time free-living males of *Melanocetus johnsoni* and *M. murrayi* are recorded from Madeira. The latter species and one belonging to the genus *Gigantactis* are new to Madeira. A species of *Lasiognathus* based on two specimens is described as new to science.

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