

This paper not to be cited without prior reference to the author

International Council for  
the Exploration of the Sea

C.M. 1975/ J : 20  
Pelagic Fish /Southern/  
Committee

POLISH CATCHES OF TRICHIURIDAE  
in the GECAP area

by P. Krakus

Sea Fisheries Institute  
Świnoujście



THÜNEN

Digitalization sponsored  
by Thünen-Institut

The distribution of Trichiuridae in the waters of the African Atlantic has been shown in Fig. 1. The farthest northern border of distribution of Lepidopus caudatus is near the North Sea, where it can sporadically appear. The farthest southern limit of its appearance is the Cape of Good Hope. This species has not been found in the equatorial zone of the Atlantic /in latitudes from about  $20^{\circ}$  N to  $15^{\circ}$  S./. Lepidopus caudatus is then a bipolar species occurring in both hemispheres, the equatorial zone excepted.

In the GECAP area Lepidopus caudatus occurs along the African coast from the northern limit of the area / $36^{\circ}$  N/ toward the south. The southern limit is not constant and may be subject to certain slight shiftings northward or southward. In the area of  $20^{\circ}$  N to  $25^{\circ}$  N there occurs an allied species Trichiurus lepturus. The population of

Trichiurus lepturus decreases in a northward direction and the main areas of its occurrence extends along the African coast south of 20° N to the equatorial zone.

On the basis of Polish catches it may be stated that L. caudatus forms commercial concentrations in the area off the South-Moroccan coasts and the North of Spanish Sahara, i.e. from about 34° to 24° N. Besides, such concentrations have been found on mid-oceanic banks spread between Portugal and The Canary Islands i.e. Gettysburg Bank, Seine Bank, Daccia Bank, and principally on Conception Bank.

Trichiuridae were caught by Polish fishing fleet from the beginning of the exploitation of African grounds i.e. from 1962. They constituted, however, an insignificant part of catches till 1971 attaining 2 to 2.2 % of total tonnage.

Table I.

Trichiuridae /L.caudatus and T.Lepturus together/  
in the total Polish catches in N.W. African waters  
in the years 1968-1973

Years	Total Polish catches /in th.tons/	Trichiuridae catches	
		tons	% of total catches
1968	33.6	749	2.2
1969	41.7	872	2.1
1970	31.2	638	2.0
1971	32.2	678	2.1
1972	39.9	3 330	8.3
1973	34.4	2 988	8.6

Data shown in Table I. include both species of Trichiuri-  
dae caught in the areas of N.W. Africa. Due to the fact  
that both species are considered as one commercial assort-  
ment, there are serious difficulties to obtain separate  
catch statistics.

The analysis of the species composition of catches  
presents, that north from latitude 26° N there occurs  
exclusively L. caudatus, and that the area from 20° - 26° N  
is inhabited by both species together. The following crite-  
rion for dividing the landings can be used:

	<u>L. Caudatus</u>	<u>T. lepturus</u>
<u>Morocco</u> statistic area	100 %	-
<u>Sahara</u> statistic area	60 %	40 %
<u>Cap Vert</u> statistic area	-	100 %

The estimation of the catch of L. caudatus done on  
the basis of the above mentioned criterion is presented in  
Table II.

Table II

Polish catches of Lepidopus caudatus in the area  
of Morocco and Spanish Sahara /in tons/

Years	Morocco	Spanish Sahara	Total for CEECAF	L.caudatus participation in the total Polish catches
1968	185	248	433	1.3
1969	8	128	136	0.3
1970	65	181	246	0.8
1971	410	112	522	1.6
1972	3095	64	3152	7.9
1973 <sup>x/</sup>	2558	258	2816	8.2

x/ for January and February only.

From these data it results that in 1972 and at the beginning of 1973 there occurred a rather significant increase of catches reaching more than 8 % of the total caught in the CECAF area.

The above mentioned increase is connected with the commercial reconnaissance carried out in 1971 and 1972 by Polish trawlers in the area of the Moroccan south coast, where large concentrations of Lepidopus caudatus were found. These concentrations were dense enough to develop a profitable exploitation of Lepidopus exclusively.

In Fig. 2 the distribution of the Lepidopus caudatus in time and space during the period 1968-1973 has been presented. The most dense concentrations of Lepidopus remain within the limits of 28° to 30° N, whereas during the early spring period they shift northward to the lat. 32° and even 34° N. The depth range, in which concentrations occur, is from 25 to 300 m, most frequently, however over the edge of the continental slope near the depths 90 to 300 m. Trichiuridae appear in shoals in the mid-water and near the bottom. Vertical migrations have been observed. In day time the concentrations were near the bottom, during the night they were in the upper most water layer. The most suitable fishing gear appeared to be the pelagic trawl with big meshes. The range of temperatures in which concentrations of Lepidopus occurred varied from 12 to 15.5° C, the optimum seems to be 15° C.

It is interesting to mention that the catches consisted from fish with matured gonads, running or half-spawned in all months of the year, except July and August /lack of observations/. The spawning and pre-spawning concentrations are stable for a period of about 10-40 days. After this period the fish disappear, migrating in an unknown direction. The interval between the disappearance of one spawning concentration and the appearance of the next concentration lasts about two to four weeks. The formed concentrations are dense and homogenous, and it is not rare to obtain 20 tons in a haul of 1 - 2 hours duration. The by-catch consisted mainly from Brama rayi and Macrorhamphosus scolopax. In case when Trichiuridae concentrations are more scattered then horse mackerels /Trachurus trachurus and Trachurus picturatus/ accompany them as well as mackerel /Scomber colias/ in various quantitative proportions.

The length composition of Lepidopus in Polish catches is shown in Figure 3. The length of Lepidopus is varying in the range from 40 to 180 cm with a predominance of fish of length 90 to 150 cm - meanly 120 cm. Off the Moroccan coasts /lat. 26° to 30° N/ there were caught almost exclusively large and sexually mature individuals, whereas off the Sahara coasts there were observed adults and mature fish mixed with young individuals. It is the same, insofar as the midoceanic banks between Portugal and Canary Islands are concerned, where the presence of adults and matures as well as young fish has been noted.

Further studies on Trichiuridae especially on Lepidopus caudatus, its biology, distribution and evaluation of the state of the stocks, ceased in 1973 due to enlarging of the zone of national waters by Morocco.

It should be emphasised, however, that off the South-Moroccan coasts there are large possibilities to develop the fisheries based on Trichiuridae resources. This species is not presently exploited on a commercial scale and its resources are subject to natural reduction.

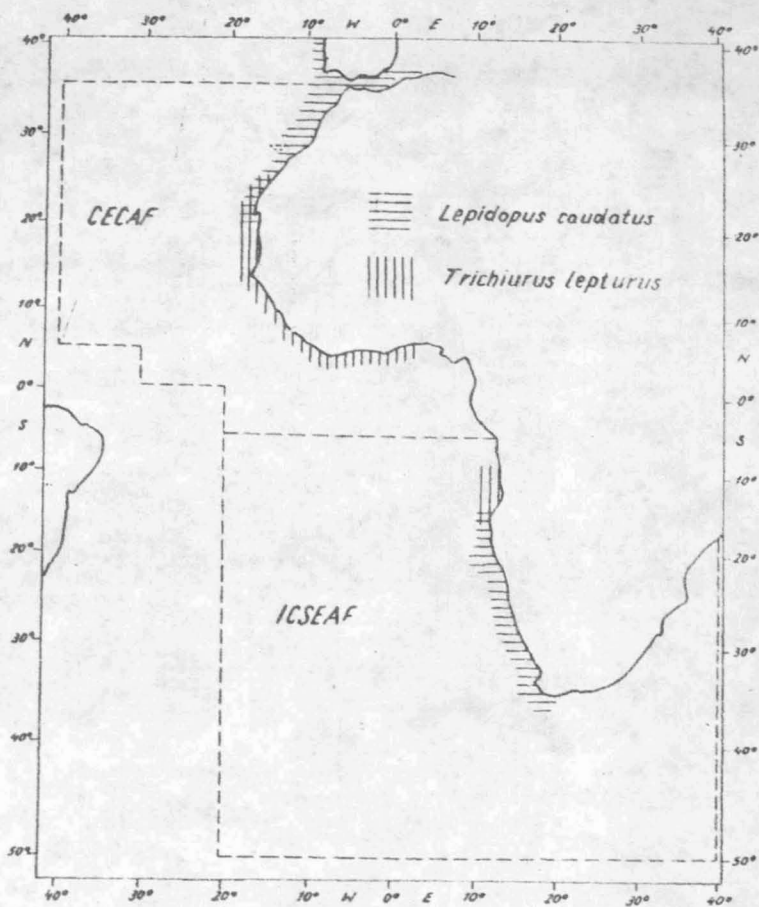


Fig. 1. Geographical distribution of Trichiuridae /Lepidopus caudatus and Trichiurus lepturus/ in eastern Atlantic waters.

Pos. geogr.	Months (1968-1973)											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
35-36° N												
34-35°												
33-34°			■									
32-33°												
31-32°		■	■	■								
30-31°			■	■	○	■			■	+		
29-30°		■	■	■		■			■	■	■	■
28-29°		■	■	■	○	■	○	○	○		■	■
27-28°	○	○	■	■	○	○			○		○	
26-27°	○	■	■	■	○		○	+	■	■	○	○
25-26°	■	■	■	+	○		○	○	+	○		○
24-25°	+	○	+	+	○		+	○	■	○	■	■
23-24°	+	+	+		+	■	○	+	+	+	+	○
22-23°	+	○	○	○		○	+	+	+	+	+	+
21-22°	+	+	+	○	○	+	+	+	+	+	+	■
20-21° N	+	+	+	+	+	■	+	+	■	■	+	+



Fig.2. Distribution in space and time of Polish catches /G.p.u.s./ of L. caudatus in the northern zone of the CECAP area. /1968 - 1973/



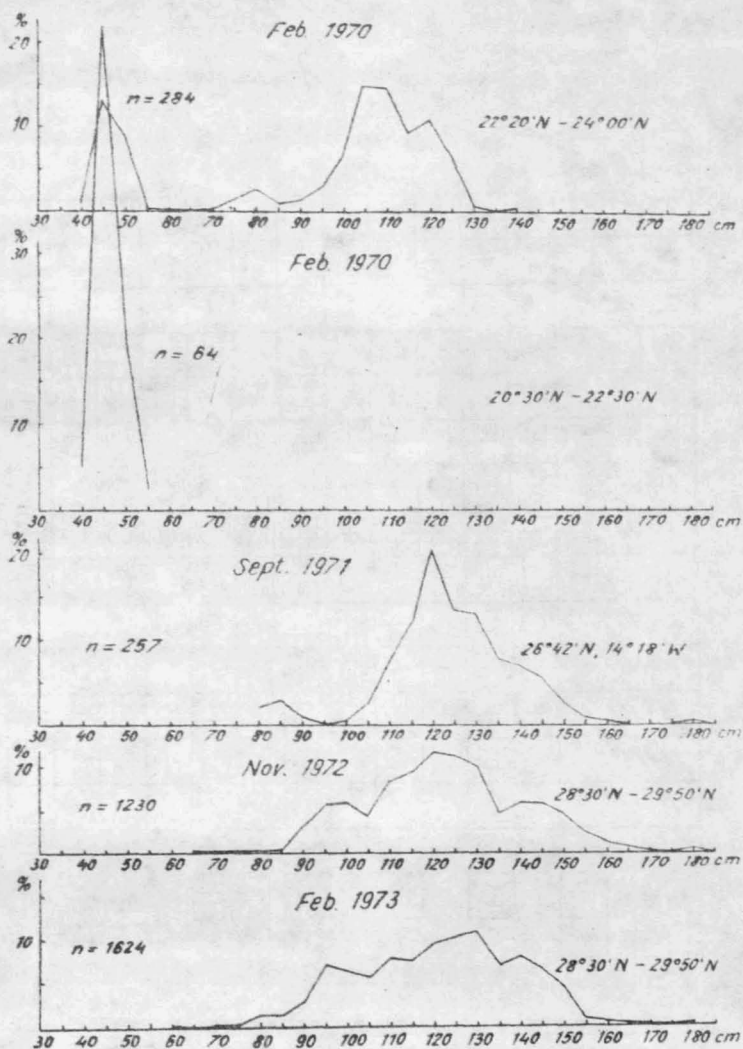
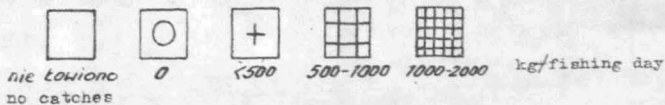


Fig.3. Length composition of Lepidopus caudatus catches in the northern zone of CECAP area in 1970 - 1973.

months:

MESSAGE POZYCJA	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
23-24°N	+	+	+		+		○	+	○	+	+	○
22-23°	+	○	○	○		○	+	+	+	+	+	+
21-22°	+	+	+	○	○	+	+	+	+	+	+	+
20-21°	+	+	+	+	+	+	+	+	+	+	+	+
19-20°	+	+	○	+	+	+	+	○	+	○	○	+
18-19°	+	○	○	+	+	+	+	○	○	○	+	+
17-18°	+	+	+	+	+	+	+	○	○	○	○	+
16-17°	○	+	+	+	+	+	+	○	○	○		○
15-16°	○	○	○	+	+	+	○	○				
14-15°	+	+	+	+	○							○
13-14°	+	+	+	+	○	○				○		
12-13°		○	+	○								
11-12°		○										

Legenda:



Distribution in time and space of Polish catches  
of Trichiurus lepturus in NW Africa grounds in

1968 - 1970.