



THE ICONOGRAPHY OF TUNA TRAPS

An essential information for the understanding of the technological evolution of this ancient fishery

Antonio Di Natale – GBYP Coordinator – ICCAT

**ICCAT GBYP Symposium on Tuna Trap Fishery for Bluefin Tuna
Tangier, Morocco, May 23-25, 2011**

A BIG QUESTION



Which gear caught this fish they were selling in Greece, possibly more than 2000 years ago?



A DIFFICULT ANSWER!

It is not easy to identify the type of gear used to catch bluefin tuna in historical times, because images are not always available.

It is very strange that a lot of information is available on tuna fishery since about 4000 years, while images of the fishing gear are only very recent(500 years!).

BLUEFIN WAS A WELL KNOWN SEAFOOD

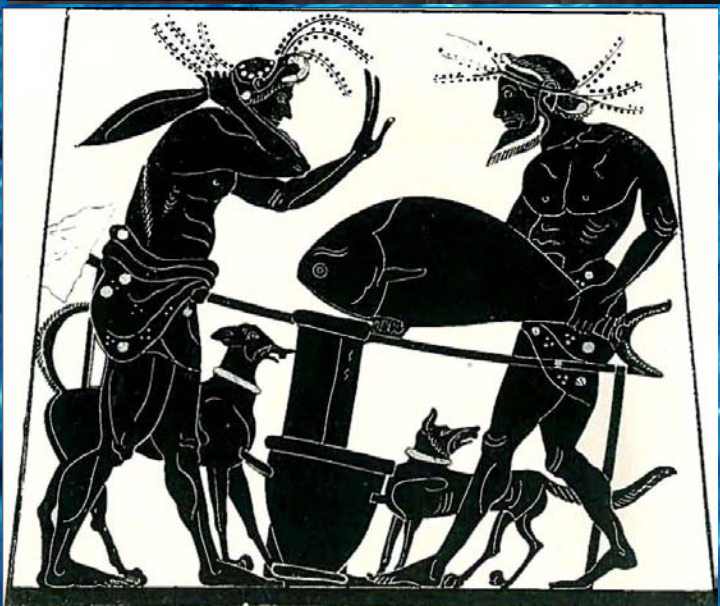
and images of bluefin tuna are not so rare!



Engraved painting of bluefin in the Genovese cave, Isle of Levanzo, W. Sicily (4000 b.C.), top left.



Ispano-Phoenician coin (1 b.C) with two tunas from the Sexis (Spain), top right.



Selling a tuna, ancient Greek pottery painting (VI b.C.), bottom left.



Roman-Hispanic coin with a tuna from southern Spain, bottom right.



WHICH GEAR WAS USED IN ANCIENT TIME?

Nobody can understand which gear was used by ancient Egyptians for catching bluefin tuna, because there are no descriptions or images.

At the same time there is the strong suspect that Phoenicians used “tuna traps”, because there were land-based factories in some places where bluefin tuna fishery exists even today. Which type of net was used is still a mystery!

The Greeks are the first providing some evidences about the gear, with some descriptions.



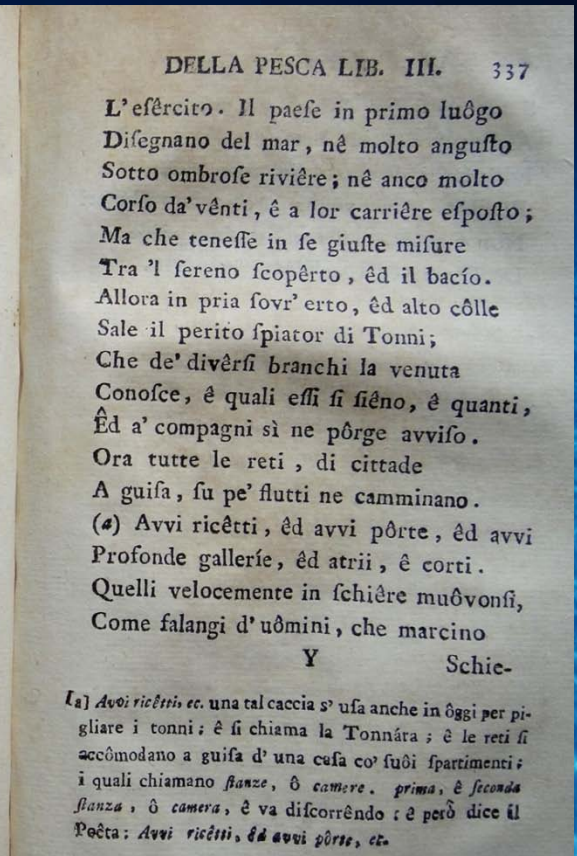
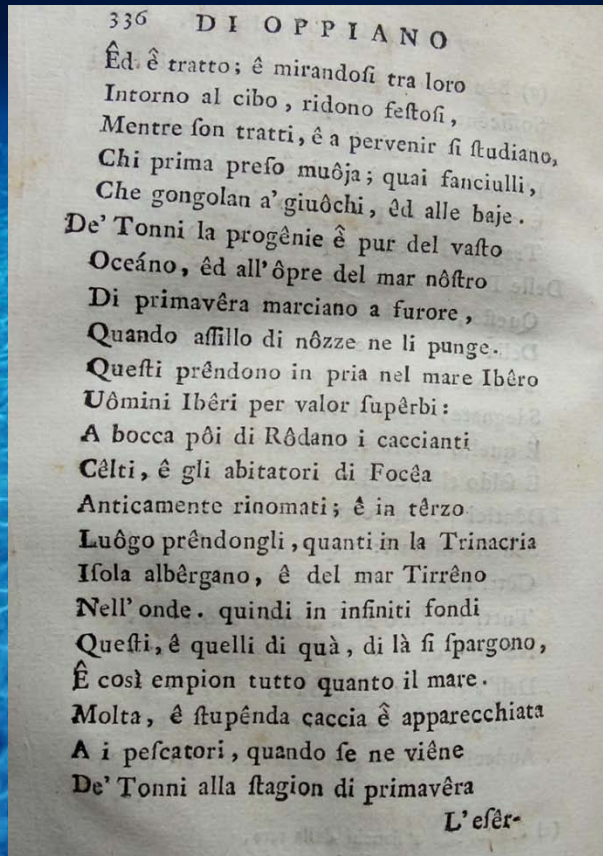
WHICH GEAR WAS USED IN ANCIENT TIME BY GREEKS?

The best description was provided by Oppianus (177 b.C.), in his *Halieutica*, a poem describing many fisheries and fish. Among these, the bluefin tuna fishery.

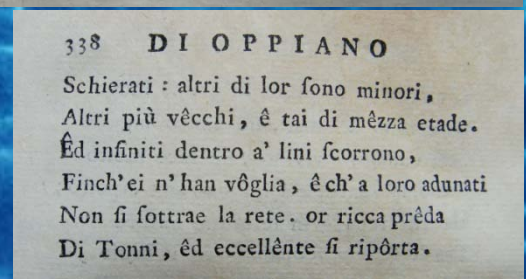
It seems that they used spotting towers along the coast, and then they used up to 5 boats for catching the tuna, but it is not clear if it was a set net with a “matanza” or a boat or beach seine, or a combination of both set net and seine, because the description is able to match all hypothesis.



WHICH GEAR WAS USED IN ANCIENT TIME BY GREEKS?



This is the text (as it was translated by Salvini in the XVIII century).





WE ALL HAVE A FURTHER HOPE:

The Romans were able to provide good descriptions and images of all the most relevant activities at that time, and bluefin tuna fishery was really an important economic activity.

But Plinius and other famous writers provided very rough descriptions and we know for sure that Romans were using spotting towers, but we don't know what kind of nets they were using, **because descriptions are vague and no one single mosaic or any mural painting, as far as we know, is clearly showing this fishery!**



AND THIS IS REALLY STRANGE!

As a matter of fact, many fisheries, including small scale ones, were described in a detailed way either by classic authors or by mosaics found almost everywhere. Even bluefin is often depicted, but not its fishing. At least two mosaics (one in Tunisia and another one in Sicily) are showing fishing activities thought to be tuna fisheries, but there are divergent opinions on them.

Maybe, somewhere, there is a mosaic to be still discovered which will inform us about the Roman technique!

We only know that bluefin was a highly appreciated product, either salty or fresh, and it was used to prepare the famous “garum” sauce and possibly even oil.

There are clear evidences of an important commerce of tuna, along the coasts of the vast Roman empire or on mainland, in many places. There were coastal factories, most of them exactly where there were tuna traps till recent times.

We suppose that, in most of the cases, tuna traps were possibly boat seines or maybe big beach seines, or even mix gears, but nobody really knows the exact technique.



**THEN A LONG TIME OF MISSING
INFORMATION, AT LEAST TILL THE X
AND XI centuries, WHEN SOME
DESCRIPTIONS APPEARED AGAIN.
AND THIS IS REALLY STRANGE!**

At that times, it seems that tuna trap nets were mostly seines, set by several boats after that tuna schools were spotted from the top of coastal towers.



THE FIRST IMAGES FINALLY ARRIVED IN THE XVI CENTURY AND THEY WERE VERY DESCRIPTIVE!

George Braun and Franz Hogenberg, in their famous “*Civitates Orbis Terrarum*” (1572-1598) provided the first images of this Spanish fishery, with marvellous etchings by Georg Hoefnagel, the first describing the tuna fishery in Cadiz (1572) and the second showing the tuna in Conil (1575). These images not only show the type of trap (a seine, set possibly by five vessels and then operated as a beach seine), but also the way of harvesting and manipulating the tuna for the market. It was clear that everything was used for various preparations: fresh meat, salty meat, smoked meat, tuna sausages, and even the bones were used for the fire!

In this case, it was clear that the tuna trap was what the Spanish call “Almadraba de tiro”, based on the tuna spotting from lad towers.



THE FIRST IMAGES

by Braun and Hogenberg



CADIZ, olim Gades, eiusdem nominis Insule oppidum nobile portu maris Herculeo freto, temploque memorarum.



CONIL, insigne Hispæ oppidum ad fretum Herculeum quæ tuosa, tymorum piscatio ne nobile



THE FIRST IMAGES

by Braun and Hogenberg



AND THE SECOND IMAGE!

Immediately after, another image of the bluefin tuna fishery became available: **Philippe Galle** published in **1578** the book of etchings "*Ferarum, Avium, Piscium, pugnae bestiariorum et mutuae bestiarium*", from a subject by **Johannes Stradanus** and with high quality etchings by **Adrain Collaert**.

One of them depicted the tuna fishery in Naples, showing in an unclear way a purse seine operated by boats, with tuna killed by harpoons.

THE SECOND IMAGE!



89. *Parthenopææ urbis Thyneus prope litora magnis
Tempore certo anni solet aduentare cateruis.*

*Picator conto tensa hos in retia pellit,
Fuscina fugit, vel acuti dente tridentis.*



SINCE THEN, FINALLY A GOOD ICONOGRAPHY!

Thanks to the development of printed images and the diffusion of books, finally it was possible to follow even this important fishing activity, with clear images of many fishing gears from several places.

It is also very clear that “tuna trap” was not a single gear, but several gears were included in this name. This is extremely important for better understanding the historical CPUE series!

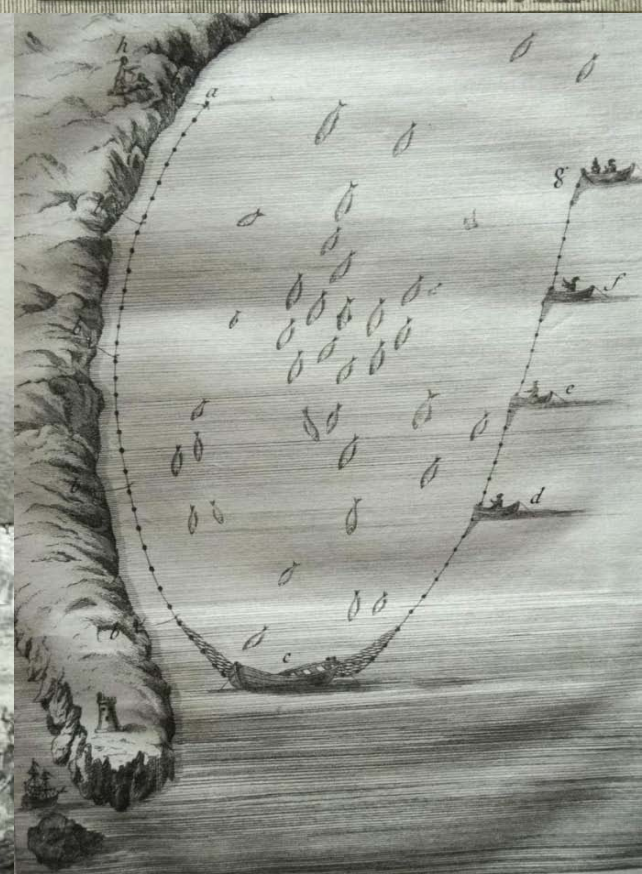
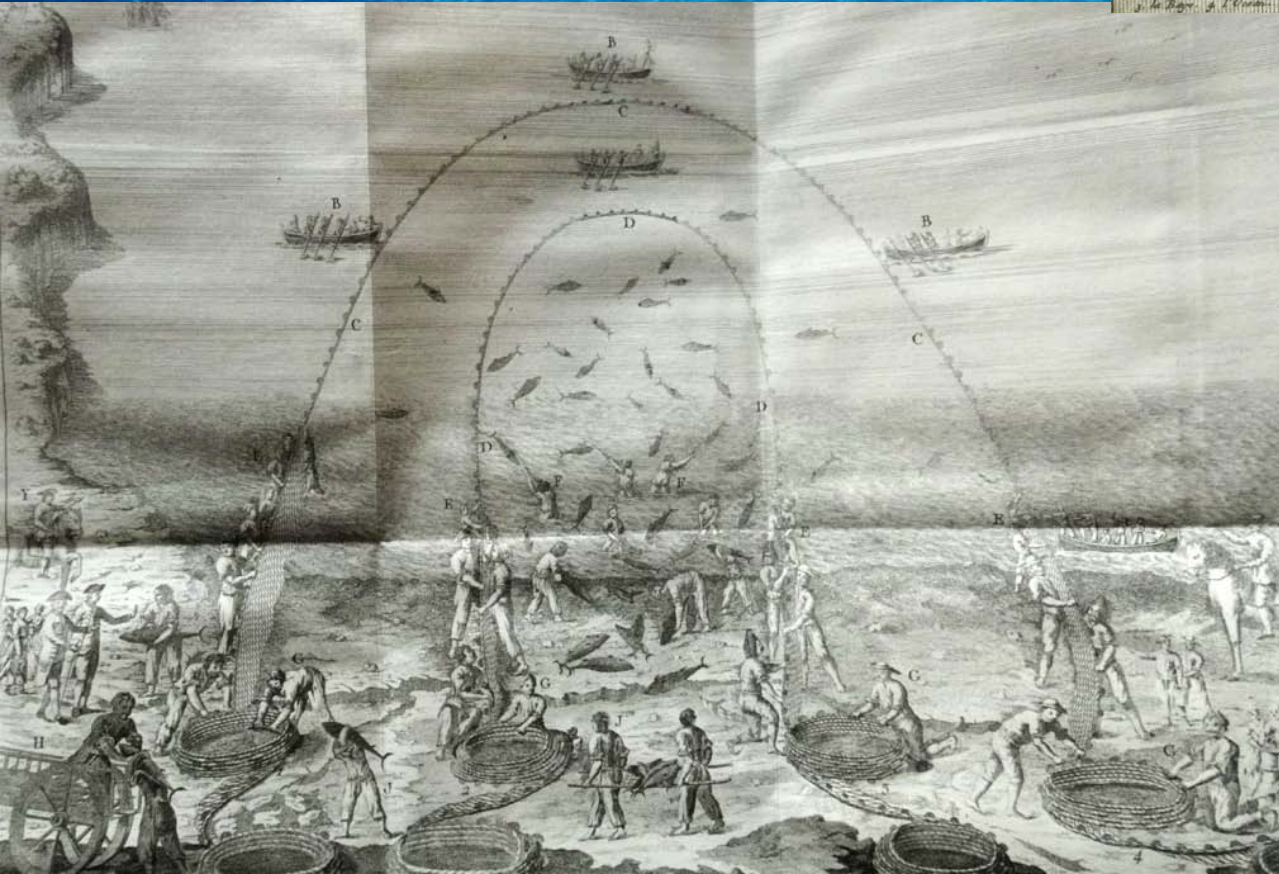
It seems that the most diffused gear in the earliest times was the seine, mostly operated by five vessels, encircling tunas at sea close to the shore or operated by the shore.

There is evidence that since classic times this fishery was an industrial one, with dedicated economic organisations and discussions about the fishing rights.

The seine fishing was very active at least along the Spanish coasts till the XVIII century, as it was clearly showed by Sañez Reguart.

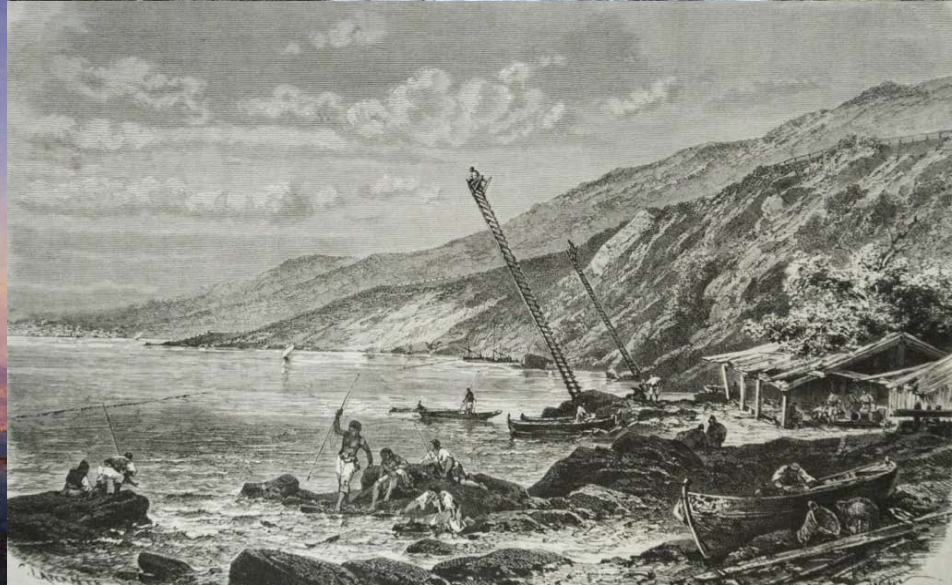


Beach and boat seine in the XVIII century



and also in the XIX century!

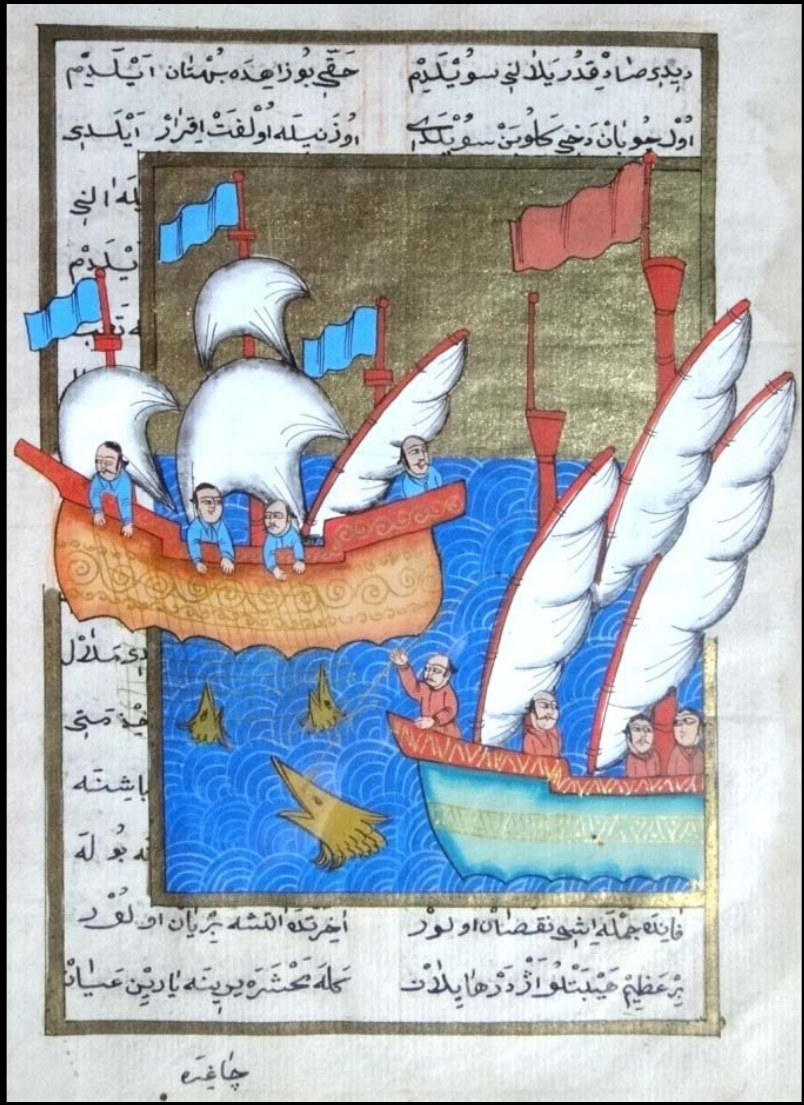
Images of the fishery in France in 1880 (left) and the XIX century and along the eastern Adriatic Sea show spotting structures and seines. In some cases (Adriatic) tuna traps were sometimes operated as a mixing of set nets and seines.





images from the Middle East

A very few images of the bluefin tuna seine fishery are available from Turkey, showing boat seines and the contemporary use of harpoons (left).





THE SET TRAP

The set trap fishery, with its structure of several chambers, gradually became the most diffused fishery. We still don't know if the "almadrabas" used in the XIV and XV centuries in many Mediterranean places were set nets, but set nets were surely used in the XVI century and from then on.

The basic papers by Sarmiento are a reference, but iconography is not there, except for some documents in the archives of Duque Medina Sidonia. A huge variety of images shows many types of set tuna traps, but iconography on typical set traps is available mostly from the XVIII century on.



A SET TRAP IN THE XVII Century

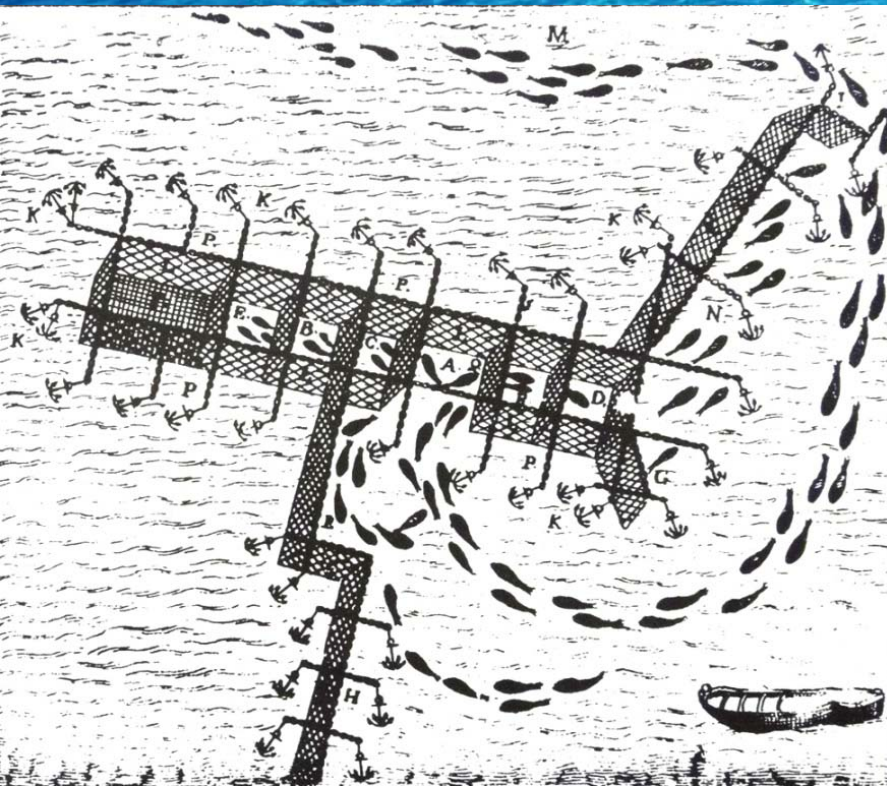


A SET TRAP IN THE XVII Century



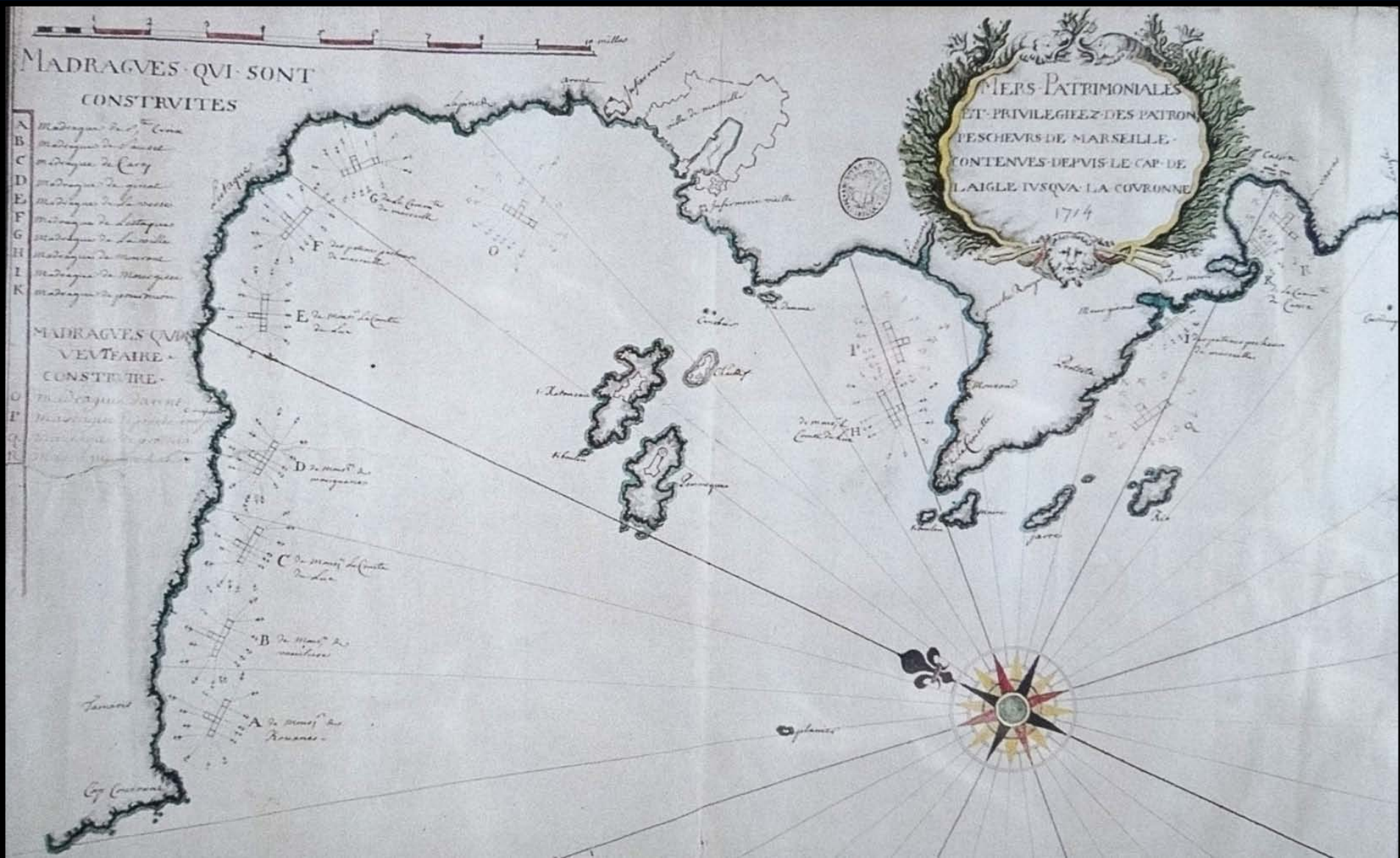


SET TRAPS IN THE LATE XVII AND EARLY XVIII Centuries





SET TRAPS IN THE EARLY XVIII Century



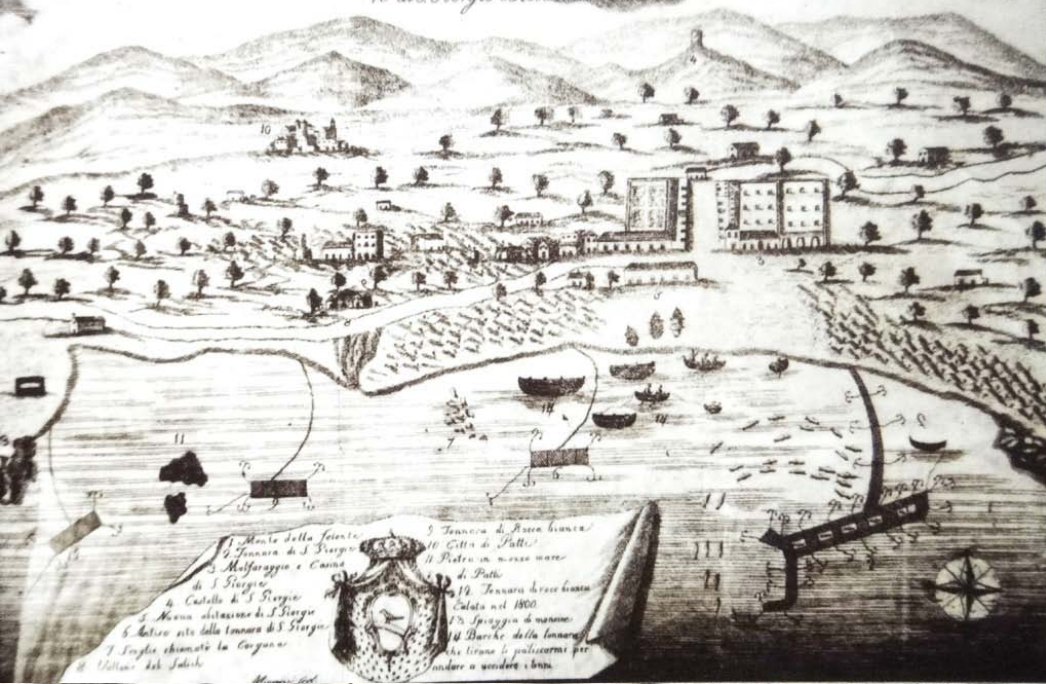


THE SET TRAPS

There were small coastal tuna traps, simple traps, very complicated and huge traps, very wide traps, traps with a few chambers and traps having a lot of chambers, traps set along the incoming migration courses and traps set along the outgoing migration courses, traps for spawners and traps for juveniles.

Even these are further problems for the interpretations of the historical series of CPUEs.

*Pianta della Baronia Mare Tonnara
re di S. Giorgio e Roccabianca e il Pellicci*



SET TRAPS IN THE XVIII Century (Sicily & Sardinia)



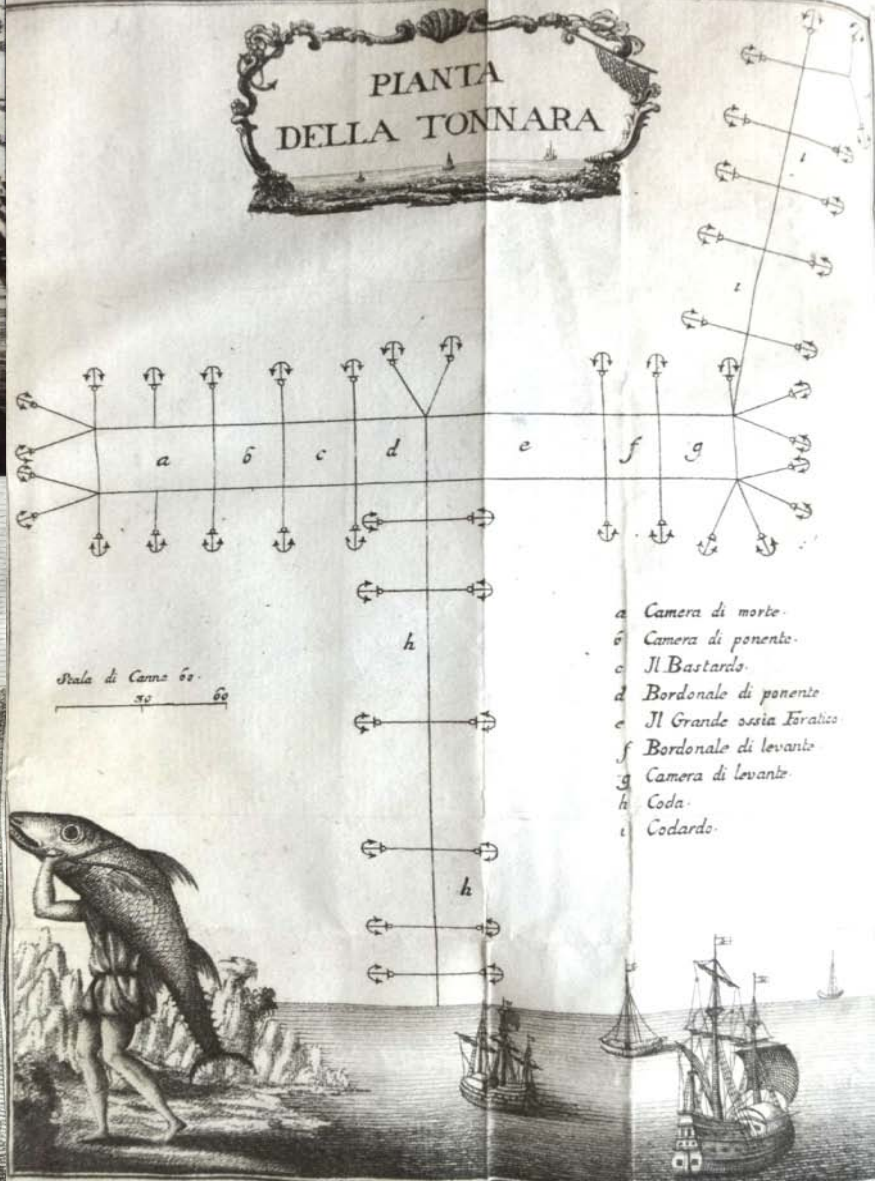
- a Camera di morte
- b Camera di ponente
- c Il Bastardo
- d Bordonale di ponente
- e Il Grate ossia Foratico

**PROSPETTIVA
DELLA TONNARA**

- f Bordonale di ponente
- g Camera di levante
- h Coda
- i Codardo



**PIANTA
DELLA TONNARA**



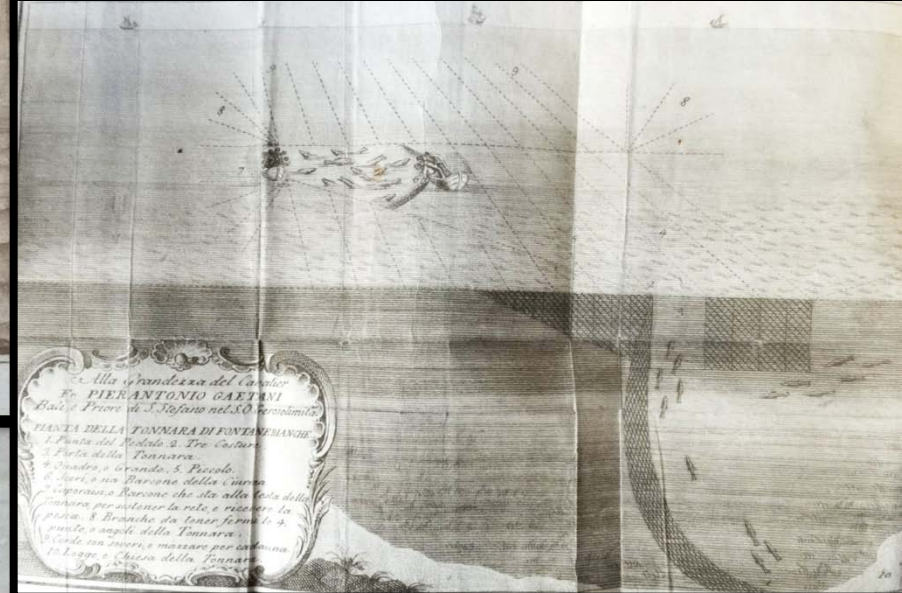
Scala di Canne 60.
30 60

- a Camera di morte
- b Camera di ponente
- c Il Bastardo
- d Bordonale di ponente
- e Il Grande ossia Foratico
- f Bordonale di levante
- g Camera di levante
- h Coda
- i Codardo

SET TRAPS IN THE XVIII Century (W. Sicily)



*Plan et Coupe de la Conare
avec les détails de la poche du thon*

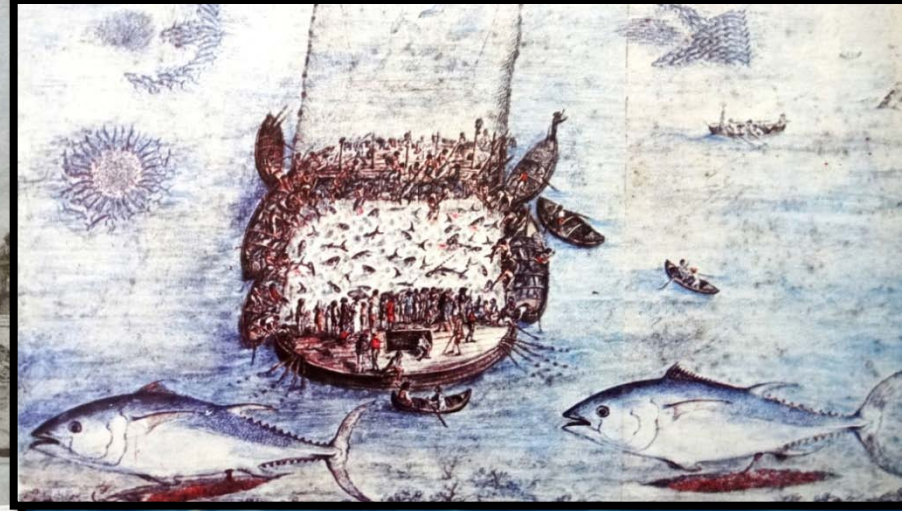


*Alla grandezza del Cavalier
FRANCESCO GAETANI
Bisio Priore di Trapani nel 1800. Per similitudine.*

PIANTA DELLA FONNARA DI FONNAREMANGHE
 1. Punta del Fociale 2. Tre Colture
 3. Porta della Fonnara
 4. Spazio a grande 5. Piccolo
 6. Scafo, o sia Barcone della Circon
 7. Capomano a Barcone che sta alla testa della
 Fonnara per reggere la rete, e ricevere la
 preda. 8. Branchie da tenere fermate in
 punti, o angoli della Fonnara.
 9. Cielo con sacci, e mazze per calmarla
 10. Torre, o Chiesa della Fonnara.

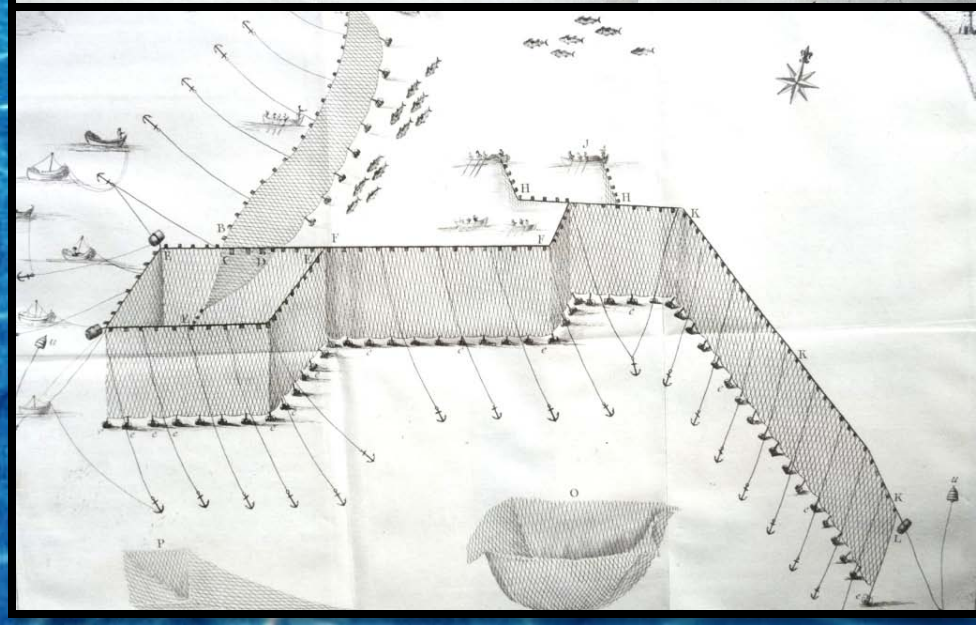
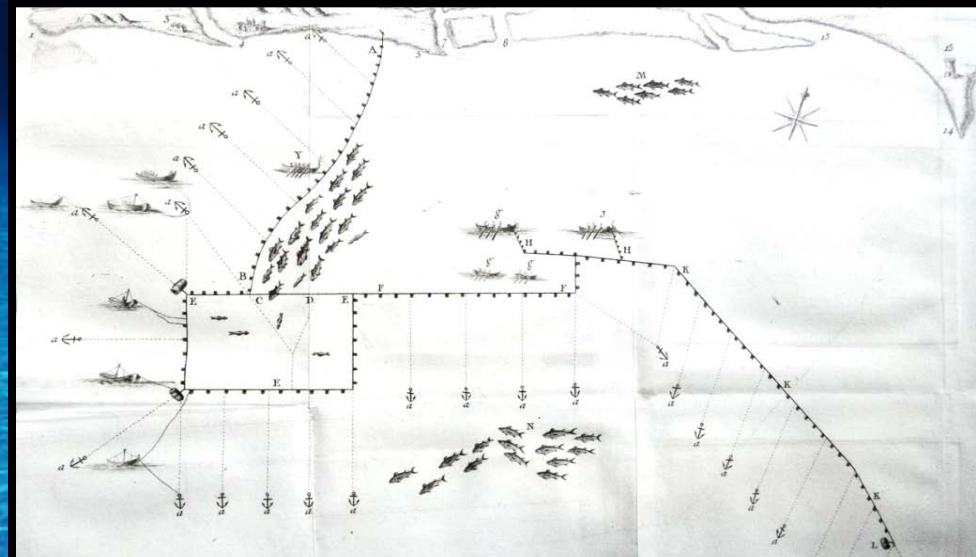
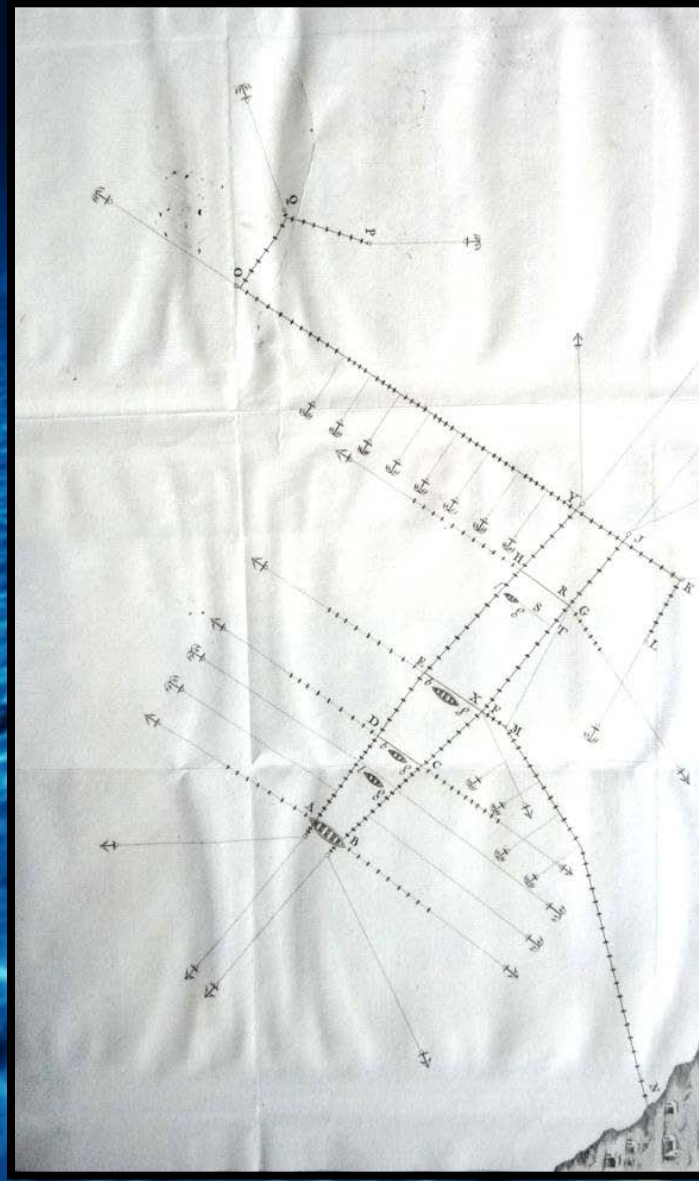


La Pesca del Thon



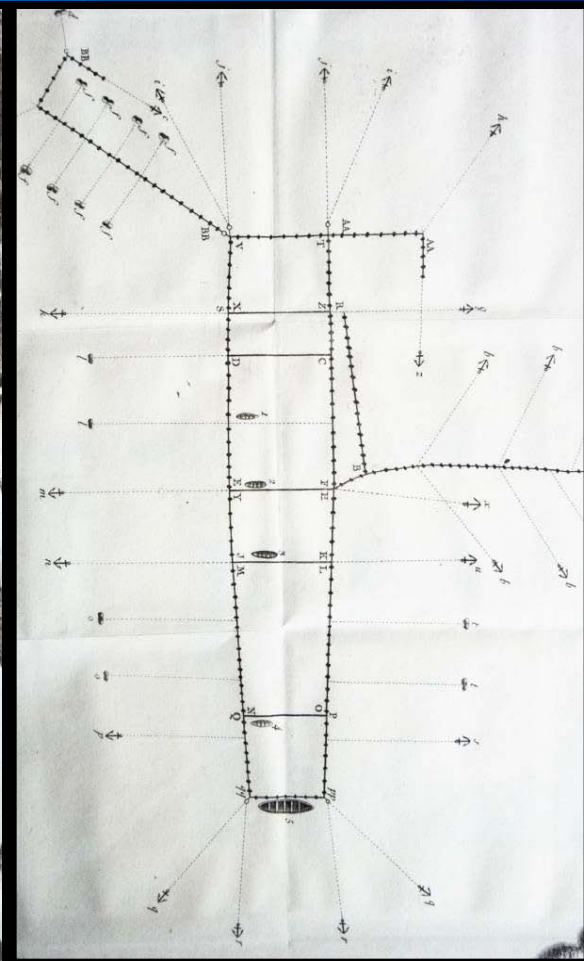
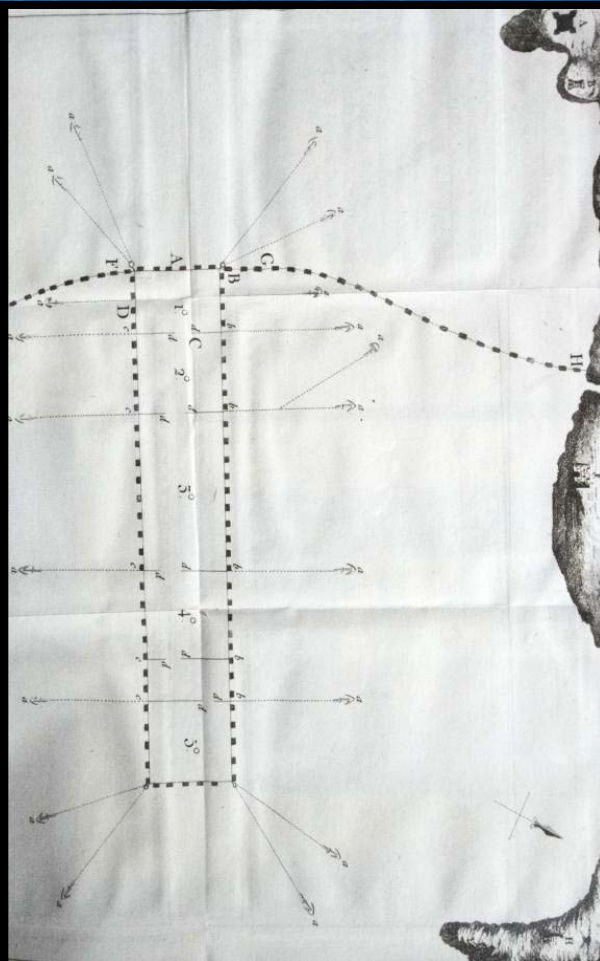
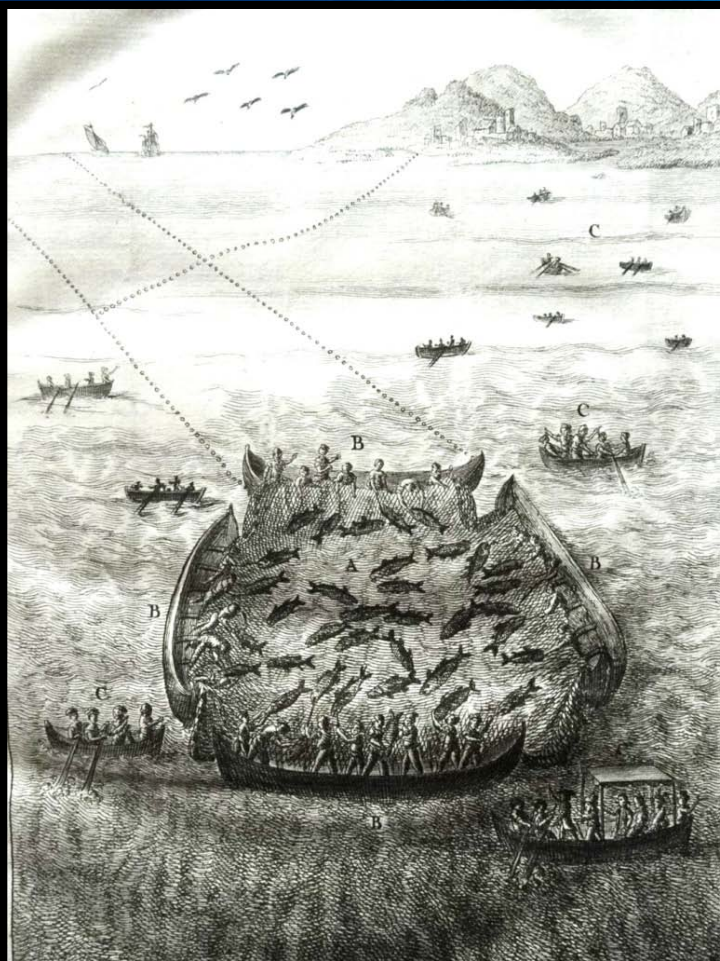


THE SET TRAPS IN THE XVIII Century in Spain (Sañez Reguart)



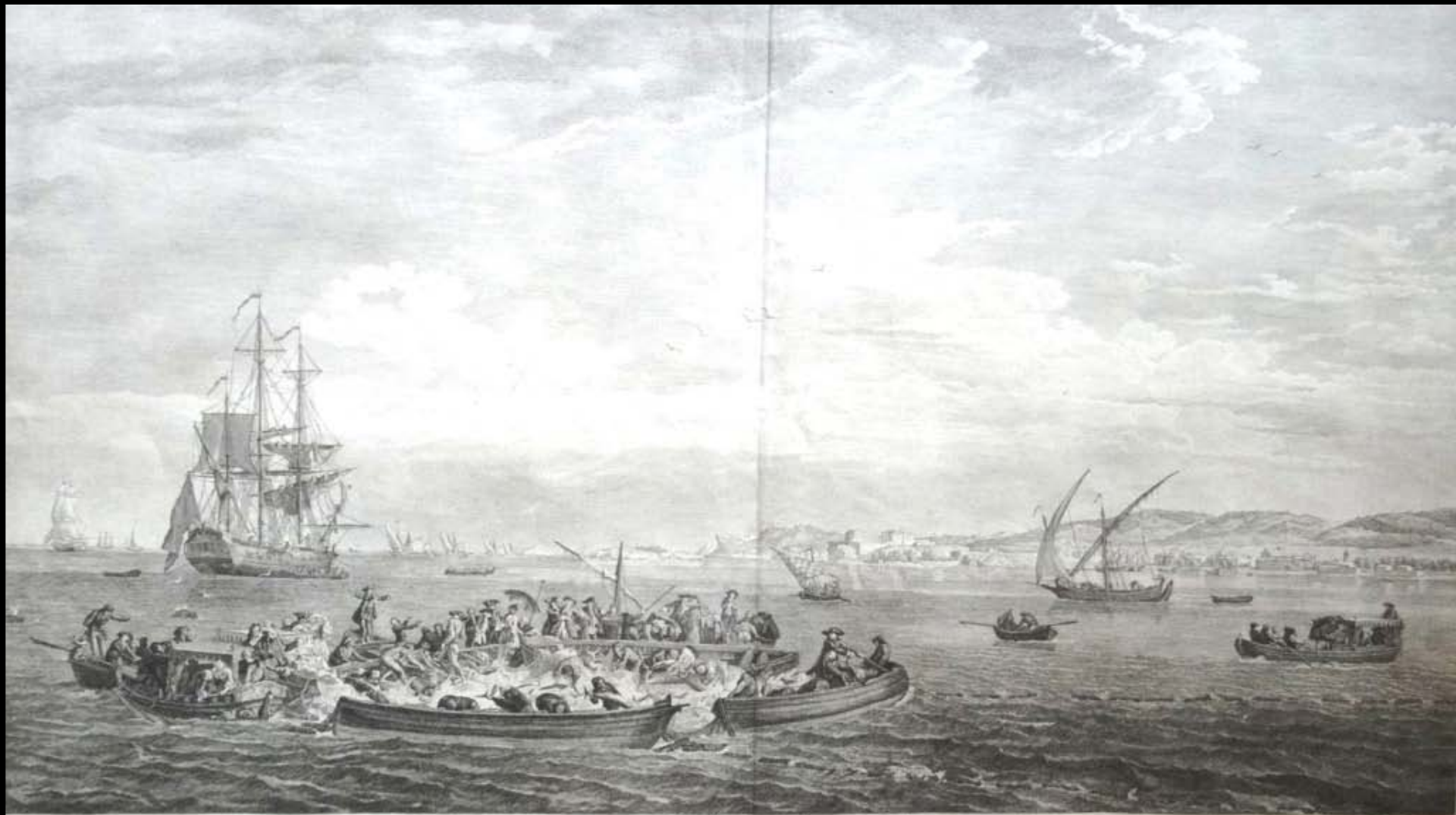


THE SET TRAPS IN THE XVIII Century in Spain (Sañez Reguart)





THE SET TRAPS IN THE XVIII Century in France



*La Madrague ou
Vue du Golphe
de Gênes*  *la Pêche du Thon
de Bandol*

*Cette Vue est d'après le Tableau Original, appartenant au Roy et faisant partie de
Cabinet de Roy en ses Conseils, Commandant de ses Ordres, Directeur et Intendant
Pour son Service de l'Académie*

*La Collection des Ports de France, dessinée par M. le Marquis de Marigny,
surintendant de ses Bâtimens, Architecte, Peintre, Sculpteur et Manufactures Royales,
Régulateur de Peinture et Sculpture*

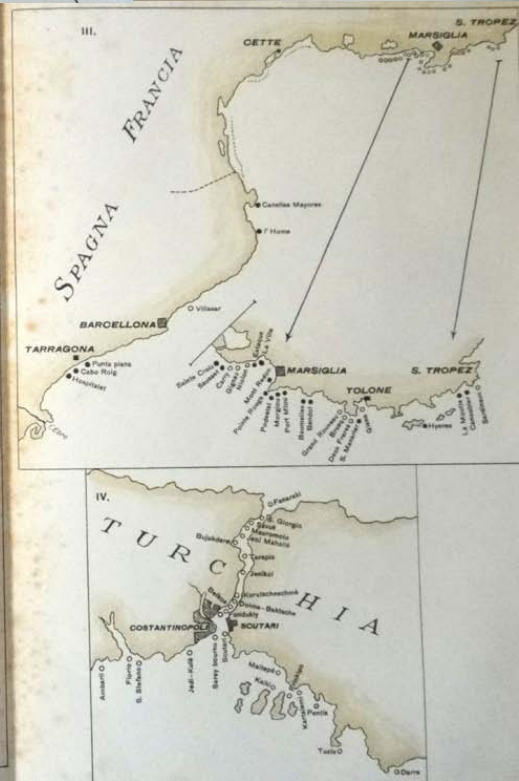
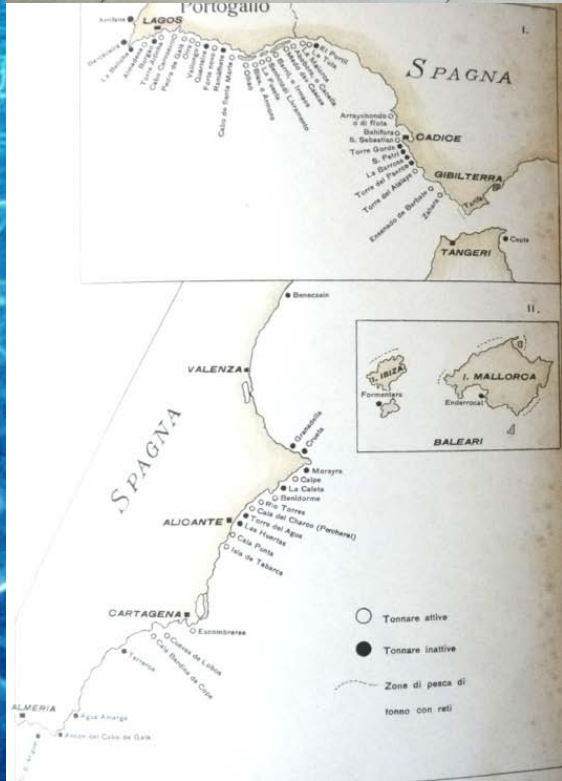
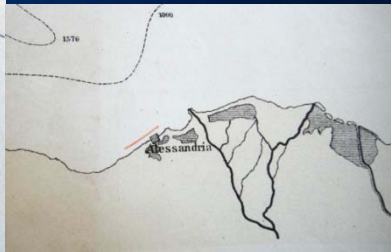
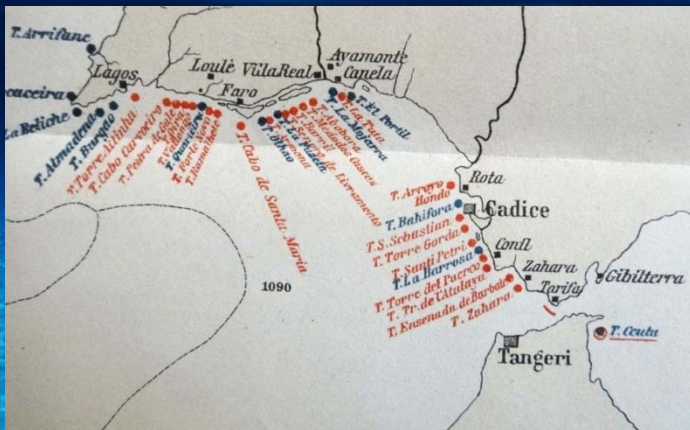


THE SET TRAPS IN THE XVIII Century in France



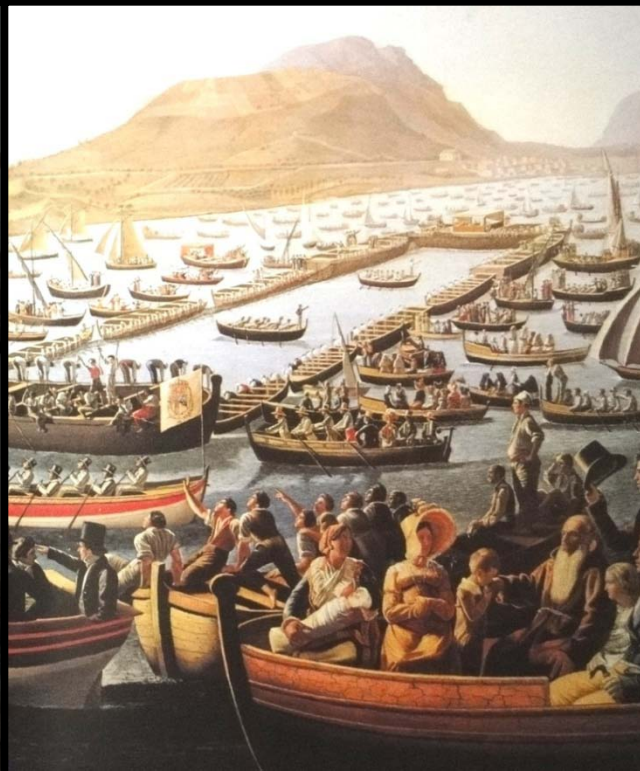
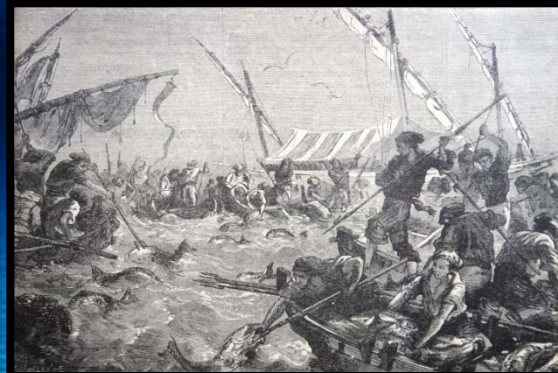


There were a lot of tuna traps in the XIX century!

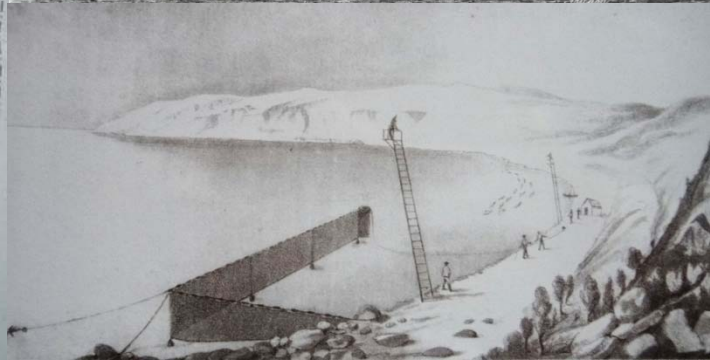
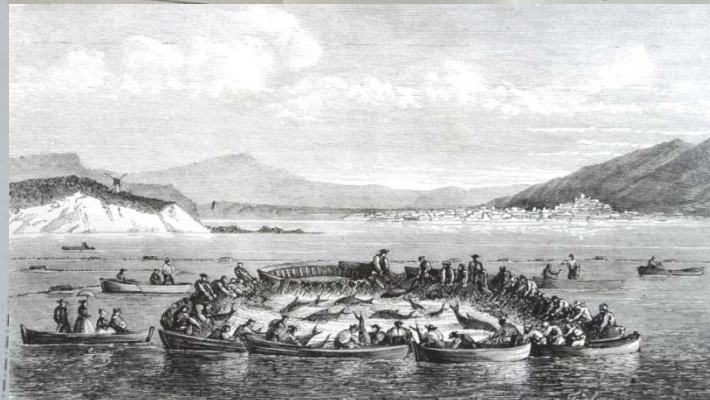
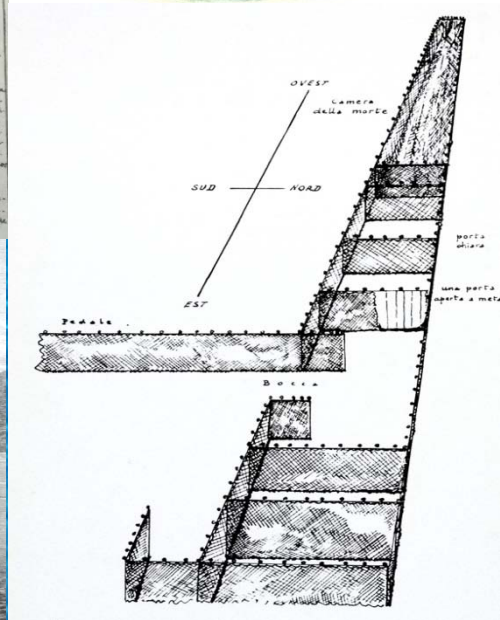
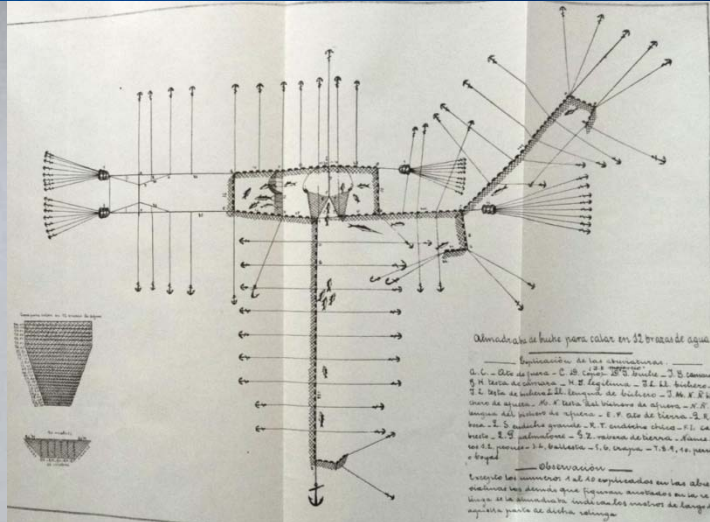




and then a cascade of images in the XIX century!



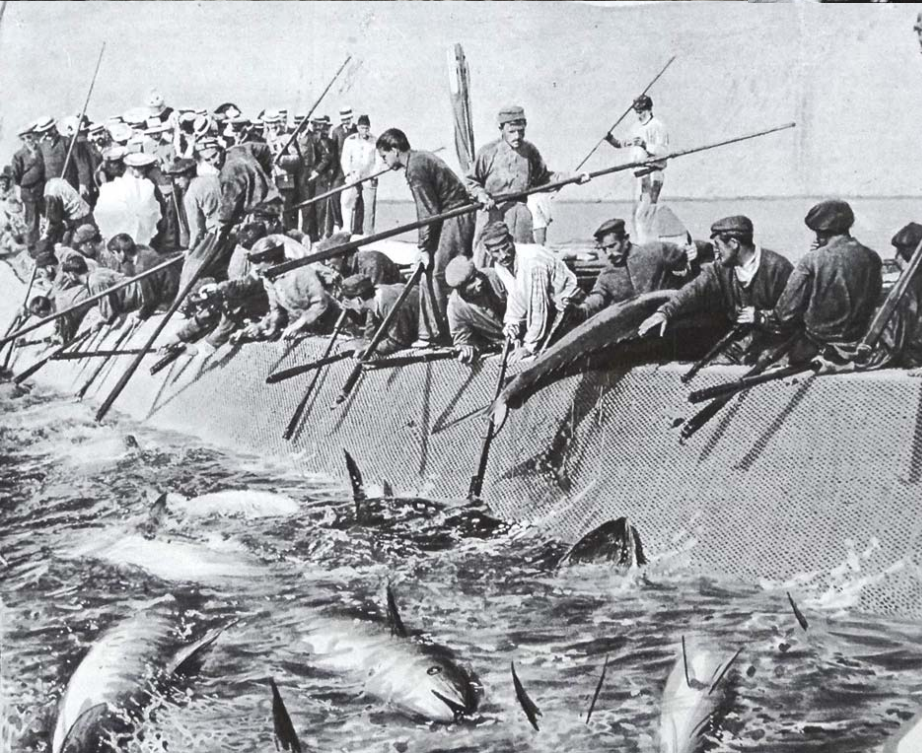
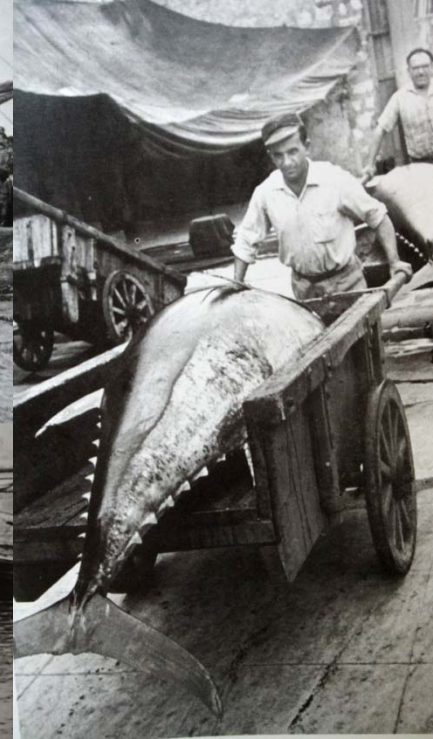
and then a cascade of images in the XIX century!





THE SET TRAPS

Then, finally, the age of photography, when images showed a lot of details.





and the colours.



ICCAT-GBYP: SCIENCE FOR SUSTAINABILITY

THANKS!

