STADES PIGMENTAIRES DE LA CIVELLE ANGUILLA ANGUILLA (L.) DANS LES ESTUAIRES DE LA LOIRE ET DE LA VILAINE.

(PIGMENTATION STAGES OF ANGUILLA ANGUILLA (L.) GLASS-EELS FROM THE ESTUARIES OF LOIRE AND VILAINE.)

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CONTRAT
(intitulé)

N° _____

DIFFUSION
libre ☐
restreinte ☒
confidentielle ☐

Ce catalogue illustre et complète le travail de référence de ELIE *et al.* (1982). Il vise à venir en aide aux biologistes amenés à comparer leurs descriptions qualitatives et quantitatives des échantillons de civelles.

mots clés : pigmentation, stades larvaires, Anguilla anguilla, civelle, anguille

key words : pigmentation, larval stages, Anguilla anguilla, eel

Présentation

A l'occasion d'une étude de la migration de la civelle (GUERAULT et al, 1991), il est apparu intéressant de produire une série de documents photographiques pour les différents stades pigmentaires. Ces documents complètent le travail de référence de ELIE et al (1982). IlS constituent un outil pour les chercheurs qui souhaitent harmoniser leurs observations, dans le cadre d'une étude internationale des arrivées de civelles (Anon, 1991).

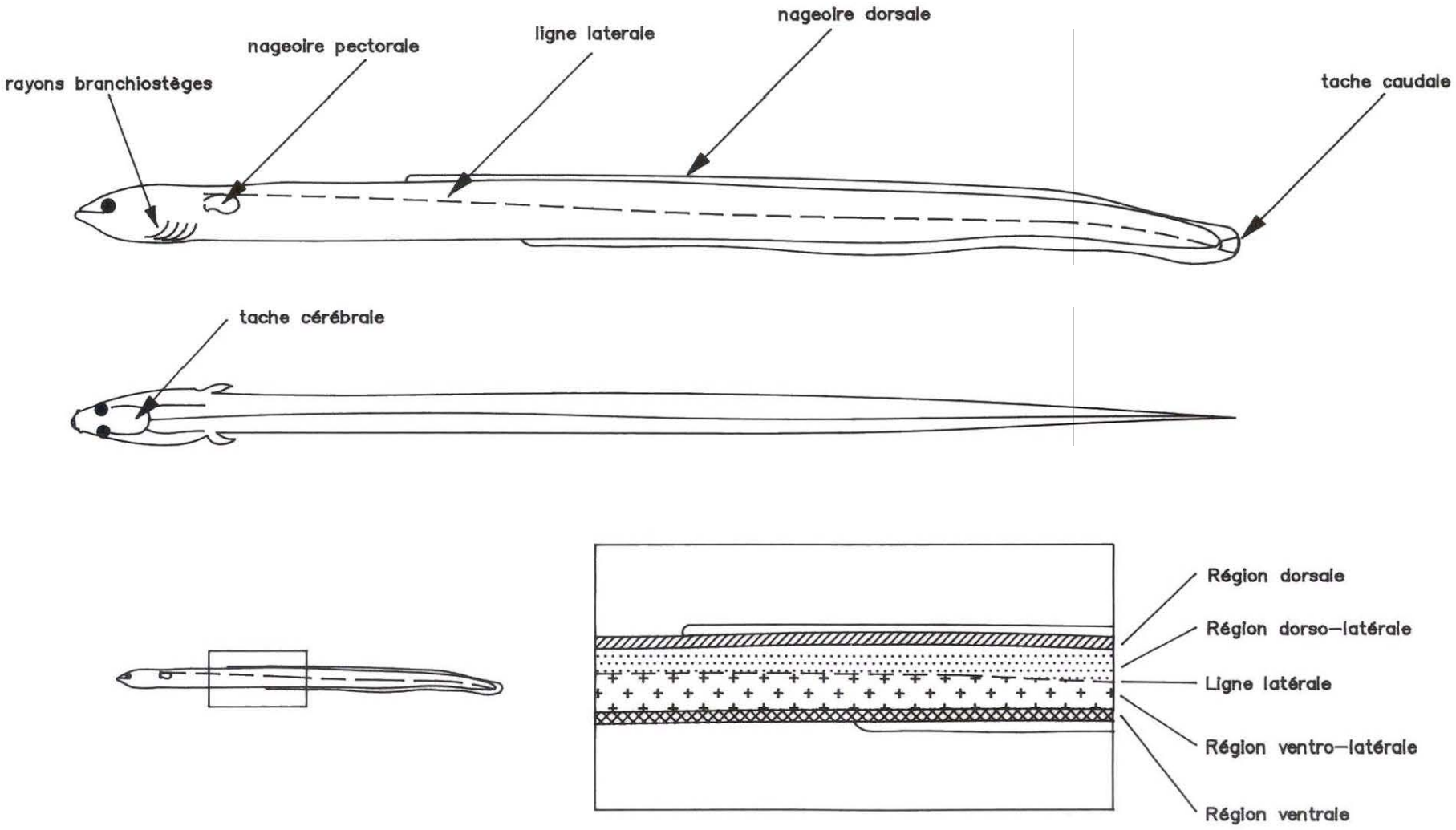
Il convient de souligner la difficulté d'établir des critères indiscutables, à cause de la variabilité naturelle du développement de la pigmentation. Des différences "d'images" peuvent donc apparaître entre ce document et des travaux antérieurs (par exemple pour l'évolution de la tache cérébrale du stade VIA0 au stade VIA1, et dans l'ordre de mélanisation des branchiostèges. Les auteurs souhaitent reprendre la proposition de ELIE et al (1982) pour différencier les termes anglais de "glass eel" (jusqu'au stade VIA1) et de "elver" (au-delà). Le critère de séparation pourrait être la complète mélanisation des branchiostèges.

Presentation

On the occasion of a study of the migration of glass-eels (GUERAULT et al, 1991), the present document on the pigmentation stages was considered as interesting. It provides an additionnal information to the reference paper by ELIE et al, 1982. This tool addressed to the eel biologists participating in an international survey of the glass-eel immigration (ANON, 1991).

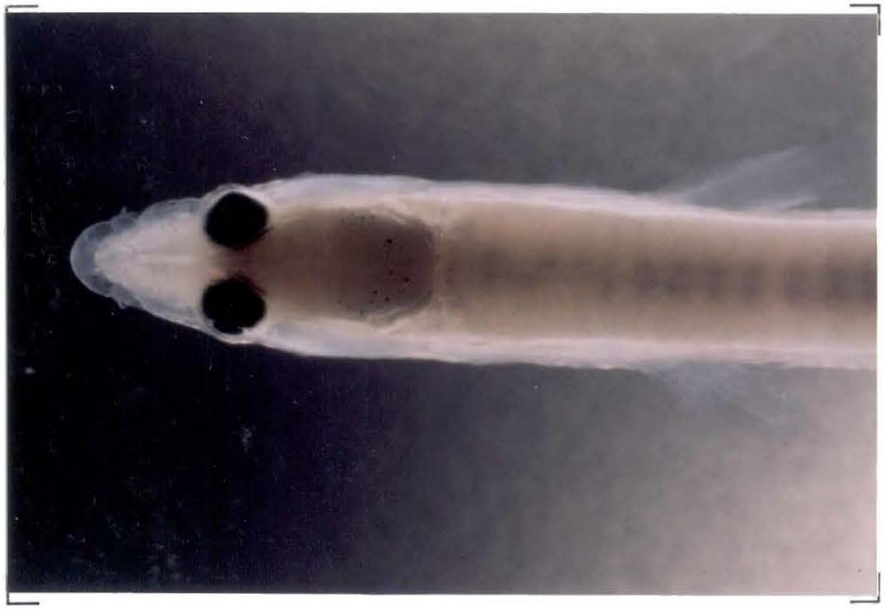
We must stress that indisputable criterious are not easily defined, due to the variability of the development of pigment. Therefore some differences of "pictures" between this document and others may be found (i.e. the evolution of the cerebral spot from stage VIA0 to VIA1, and the order of melanization of branchiostegal rays).

The authors would agree with the former proposal by ELIE et al, 1982, to separate the english terms"glass-eel" (up to stage VIA1) and "elver" (beyond). The proposed criterious for separation could be the pigmentation of all the branchiostegal rays.



STADE V_B

STAGE V_B



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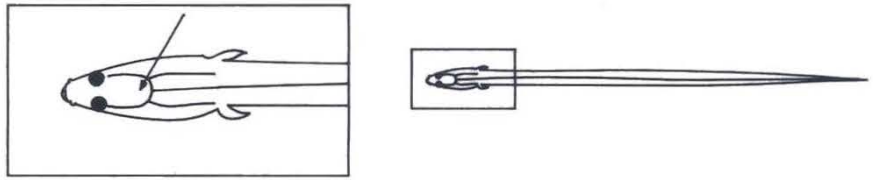
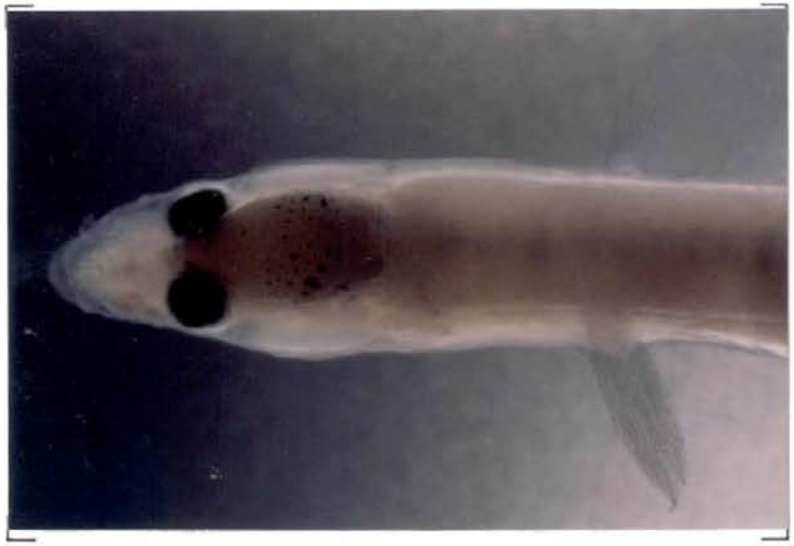


TETE 1. APPARITION DES PREMIERS MELANOPHORES DE LA TACHE CEREBRALE.

HEAD 1. THE FIRST MELANOPHORES OF THE CEREBRAL SPOT APPEAR.



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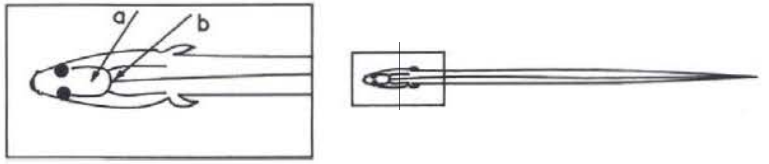
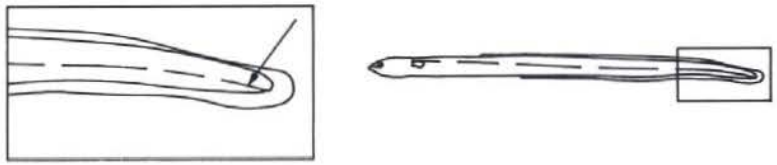


TETE 2. LA TACHE CEREBRALE (a) SE DEVELOPPE SANS MELANISATION POSTERIEURE (b).

HEAD 2. THE CEREBRAL SPOT (a) DEVELOPS WITHOUT POSTERIOR PIGMENT (b).



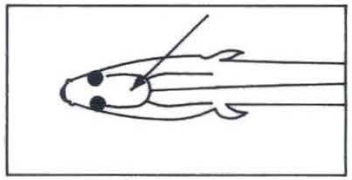
QUEUE DEBUT D'EXTENSION DORSO–LATERALE DE LA TACHE CAUDALE.

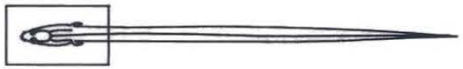
TAIL FIRST DORSO–LATERAL SPREADING OF THE CAUDAL SPOT.

STADE VI AO

STAGE VI AO

1 mm

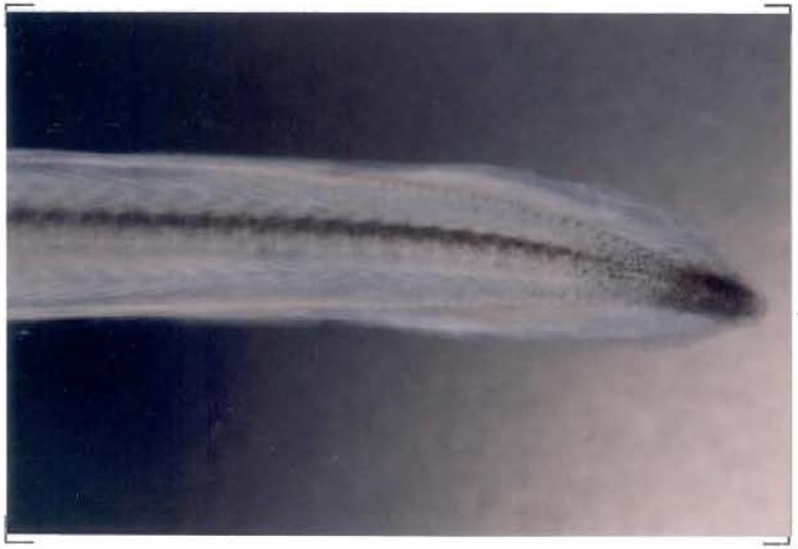




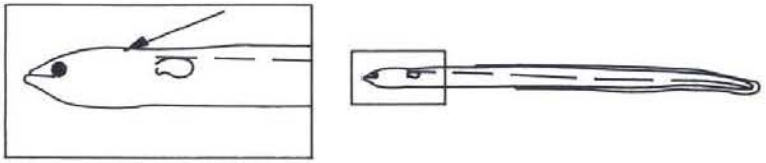
TETE 1. LA TACHE CEREBRALE EST DEVELOPPEE.

HEAD 1. THE CEREBRAL SPOT SPREADS

1 mm

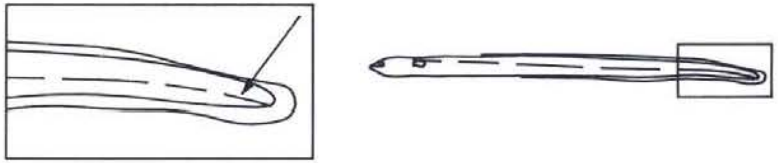


1 mm



TETE 2. LA PIGMENTATION SUPERFICIELLE POSTERIEURE APPARAIT.

HEAD 2. THE SUPERFICIAL PIGMENT APPEARS BEHIND THE HEAD.



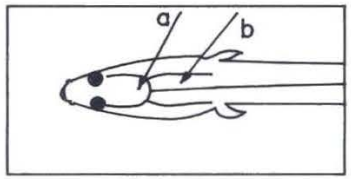
QUEUE LA PIGMENTATION CAUDALE S'ETEND SUR LA REGION DORSO–LATERALE.

TAIL THE CAUDAL PIGMENT SPREADS OVER THE DORSO–LATERAL REGION.

STADE VI A1

STAGE VI A1

1 mm

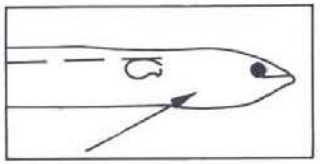


TETE 1. LA TACHE CEREBRALE CORDIFORME COMPORTE DE GROS MELANOPHORES ETOILES. (a)
LA PIGMENTATION DORSALE SE DEVELOPPE. (b)

HEAD 1. THE CEREBRAL SPOT IS CORDIFORM AND CONTAINS BIG STARRY MELANOPHORES. (a)
THE DORSAL PIGMENT IS INCREASING. (b)

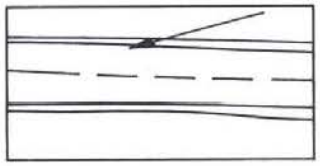
1 mm

1 mm



TETE 2. APPARITION DE LA PIGMENTATION SUR UN RAYON BRANCHIOSTEGE (ICI, SUR L'ANTERIEUR).

HEAD 2. PIGMENT APPEARS ON A BRANCHIOSTEGAL RAY (HERE, ON THE ANTERIOR RAY).



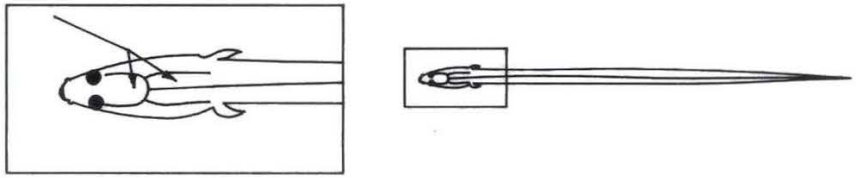
CORPS DANS LA REGION DORSALE, LA PIGMENTATION CAUDALE REJOINT LA PIGMENTATION CEREBRALE.

BODY IN THE DORSAL REGION, THE CAUDAL PIGMENT REACHES THE CEREBRAL PIGMENT.

STADE VI A2

STAGE VI A2

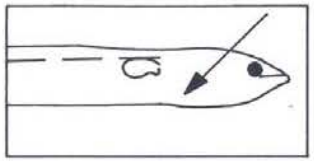
1 mm



TETE 1. INTENSIFICATION DE LA MELANISATION CEPHALIQUE ET DORSALE.

HEAD 1. THE MELANIZATION INCREASES BOTH IN CEPHALIC AND DORSAL PARTS.

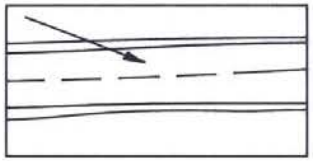
1 mm

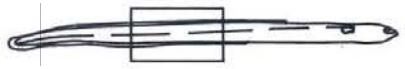


TETE 2. TOUS LES RAYONS BRANCHIOSTEGES SONT MELANISES.

HEAD 2. ALL THE BRANCHIOSTEGAL RAYS ARE PIGMENTED.

1 mm



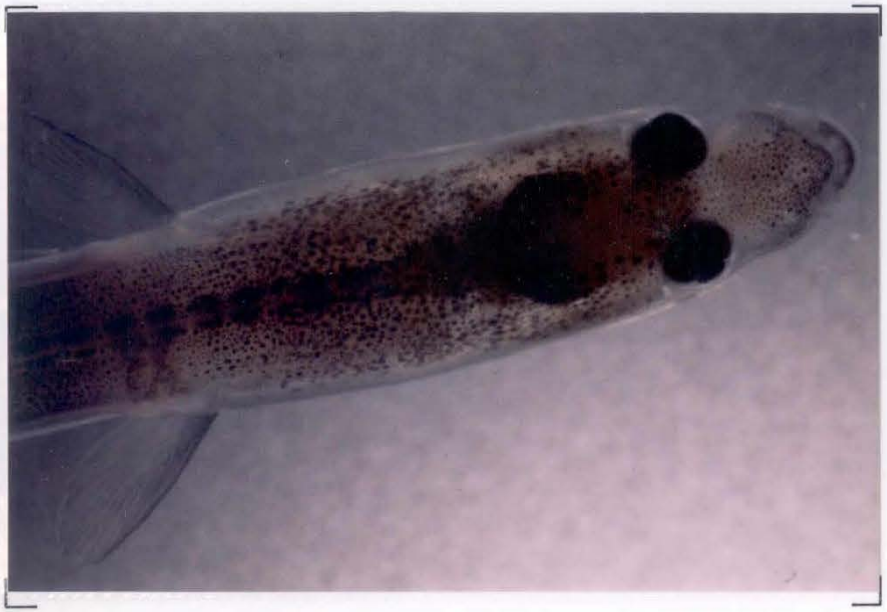


CORPS LA PIGMENTATION DORSO–LATERALE EST COMPLETE.

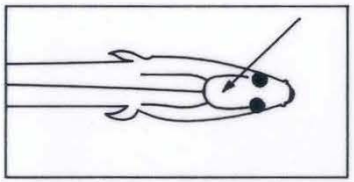
BODY THE DORSO–LATERAL PIGMENT IS COMPLETED.

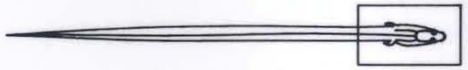
STADE VI A3

STAGE VI A3



1 mm

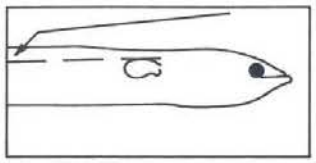




TETE LA TACHE CEREBRALE EST MASQUEE PAR LA PIGMENTATION DORSALE.

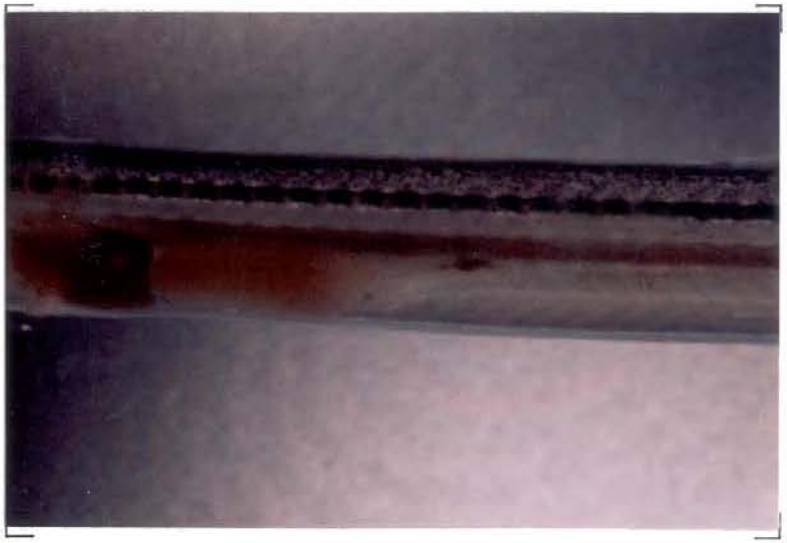
HEAD THE CEREBRAL SPOT IS HIDDEN BY THE DORSAL PIGMENT.

1 mm

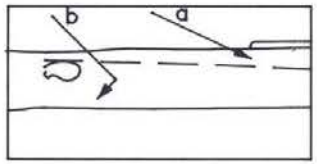


TETE ET CORPS LA PIGMENTATION DORSO–LATERALE EST COMPLETE ENTRE LA NAGEOIRE DORSALE ET LES PECTORALES.

HEAD AND BODY ***THE DORSO–LATERAL PIGMENT IS COMPLETED FROM THE DORSAL FIN TO THE PECTORAL FINS.***



1 mm



CORPS LA PIGMENTATION DORSO–LATERALE N'ATTEINT PAS LA LIGNE LATERALE (a). DEBUT DE MELANISATION LE LONG DES VISCERES (b).

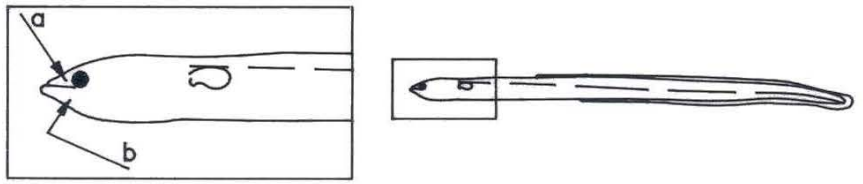
BODY ***THE DORSO–LATERAL PIGMENT DOES NOT STILL REACH THE LATERAL LINE (a). MELANIZATION STARTS ALONG THE VISCERA (b).***

STADE VI A4

STAGE VI A4

1 mm

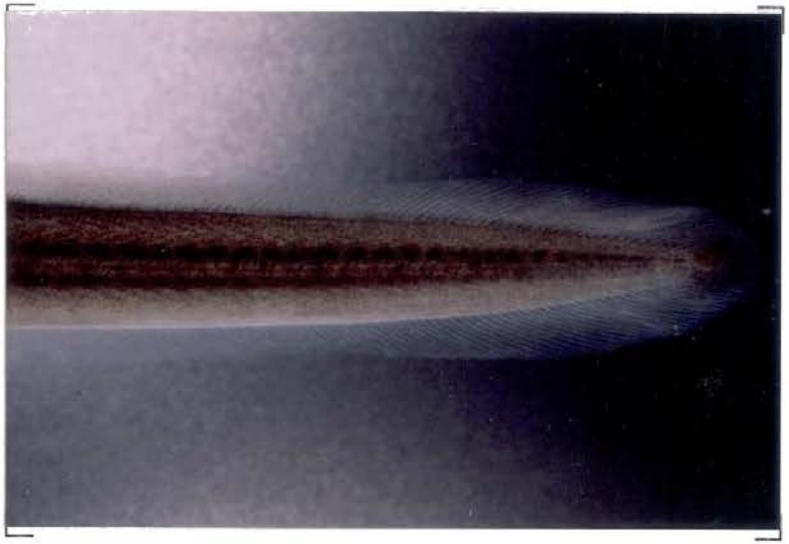
Photo C. ROUXEL



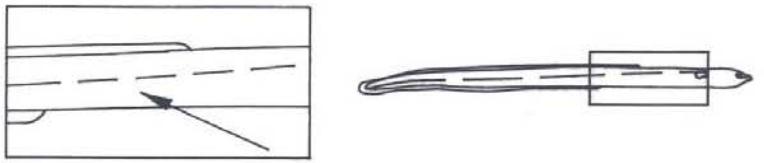
TETE LA PARTIE ANTERIEURE EST PIGMENTEE, (a)
A L'EXCLUSION DE LA ZONE VENTRALE. (b)

HEAD THE ANTERIOR REGION IS FULLY PIGMENTED, (a)
EXCEPT THE VENTRAL PART. (b)

1 mm

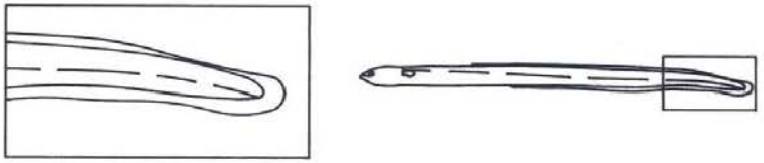


1 mm



CORPS APPARITION DE LA PIGMENTATION VENTRO–LATERALE. LA PIGMENTATION DORSO–LATERALE RECOUVRE LA LIGNE LATERALE.

BODY ***THE VENTRO–LATERAL PIGMENT APPEARS. THE DORSO–LATERAL PIGMENT COVERS THE LATERAL LINE.***



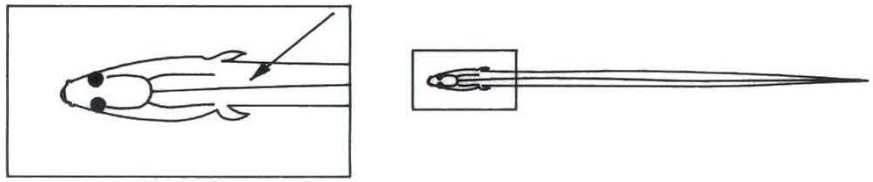
QUEUE LA PIGMENTATION POSTERIEURE EST GENERALISEE.

TAIL ***THE POSTERIOR PIGMENT IS WIDESPREAD.***

STADE VI B

STAGE VI B

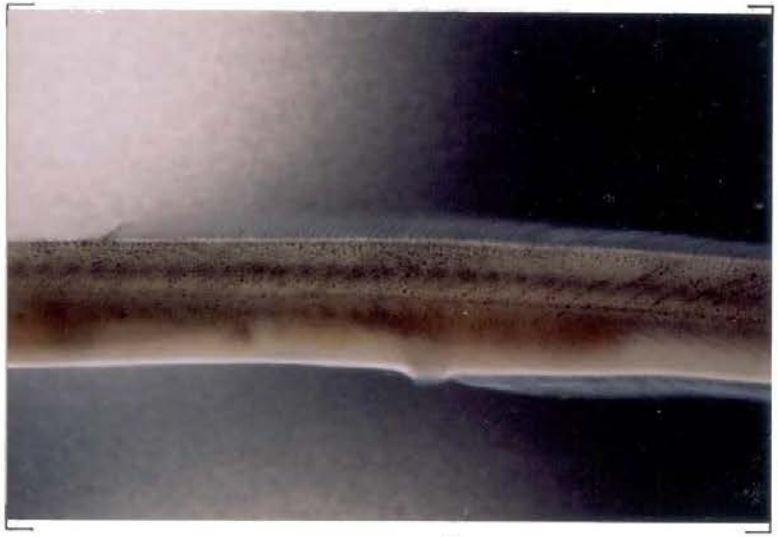
1 mm



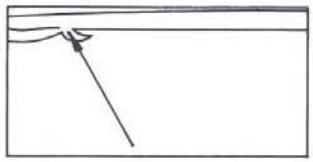
TETE LA PIGMENTATION DORSALE EST GENERALISEE.

HEAD THE DORSAL PIGMENT IS WIDESPREAD.

1 mm

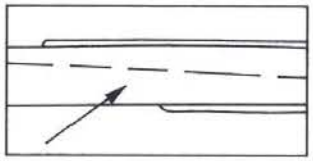


1 mm



PECTORALE APPARITION DE MELANOPHORES SUR LA BASE INTERNE DES NAGEOIRES PECTORALES.

PECTORAL FIN ***FIRST MELANOPHORES APPEAR ON THE INTERNAL BASIS OF THE PECTORAL FINS.***



CORPS PROGRESSION DE LA PIGMENTATION DORSO–LATERALE SOUS LA LIGNE LATERALE. LA PARTIE VENTRALE DEVIENT OPAQUE MAIS N'EST PAS MELANISEE.

BODY ***THE DORSO–LATERAL PIGMENT SPREADS BELOW THE LATERAL LINE. THE VENTRAL PART GETS OPAQUE BUT HAS NO MELANOPHORES.***

Références

Anon. 1991. EIFAC Report of the Seventh Session of the Working Party on Eel, Dublin,, Ireland 20–25 May 1991.

ELIE, P., R. LECOMTE–FINIGER I. CANTRELLE et N. CHARLON 1982. Définition des limites des différents stades pigmentaires durant la phase civelle d'*Anguilla anguilla* (L.), Vie et milieu, 32 (3) : 149–157.

GUERAULT, D., R. LECOMTE, Y. DESAUNAY, S. BIAGIANTI, P. BEILLOIS et P. GRELLIER, 1991. The glass–eel arrivals in the Vilaine estuary through the year 1990 : demographic features and early life history EIFAC Working Party on Eel, Dublin.

D.A.O. : Louis GIBOIRE

Photo : Jérôme HUET