

HATCHLING SUCCESS FOR DERMOCHELYS CORIACEA IN A FRENCH GUIANA HATCHERY

Marc Girondot¹
Jacques Fretey^{2a}
Isabelle Prouteau^{2b}
Jean Lescure^{2b}

¹ Laboratoire de Biochimie du Développement, Institut Jacques Monod, 2 Place Jussieu, 75251 Paris Cedex 05, France

² Muséum National d'Histoire Naturelle de Paris, 57 rue Cuvier, 75005 Paris, France

^a Fédération Française des Sociétés de Sciences naturelles

^b Laboratoire de Zoologie (Reptiles et Amphibiens)

Figure 1. Hatching successful results in the hatchery of Les Hattes - Ya:lima:po in 1986, 1988 and 1989.

Figure 2. Death of embryos during the incubation: two most sensitive stages.

Figure 3. Influence of the beginning incubation time: most significant results.

Figure 4. Description of the experiments in 1989: results of experiments.

Figure 5. Analysis of the 1989 experiments: some information about the best conditions of incubation.

Germes found on rotten eggs or eggs with dead embryos

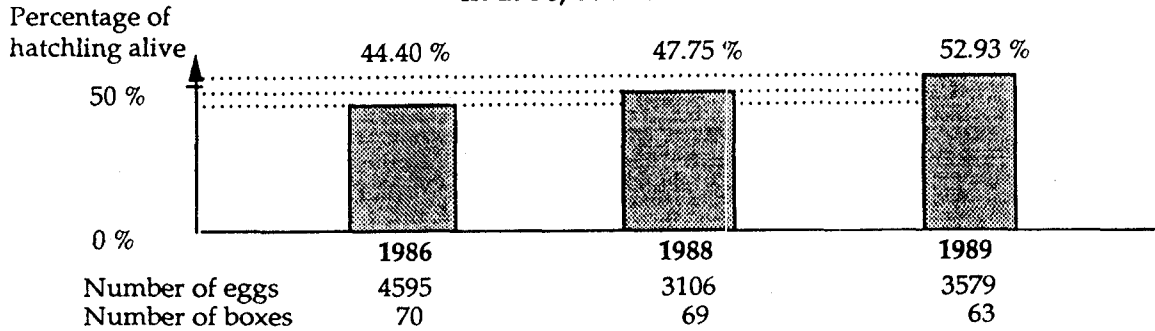
<u>Family of Micrococcaceae</u>	Name of experiment
<i>Streptococcus sp.</i>	
<i>Diplococcus sp.</i>	
<u>Family of Enterobacteriaceae</u>	
<i>Escherichia coli</i>	
<i>Proteus vulgaris</i>	
<i>Citrobacter diversus</i>	E
<i>Enterobacter sakazakii</i>	E
<i>Enterobacter cloacae</i>	
<i>Enterobacter gergoviae</i>	E
<i>Proteus (Morganella) morganii</i>	
<i>Aeromonas sobria</i>	E G
<i>Aeromonas hydrophila</i>	
<u>Family of Pseudomonadaceae</u>	
<i>Pseudomonas aeruginosa</i>	E G
<i>Pseudomonas stutzeri</i>	E
<i>Pseudomonas putida</i>	E
<i>Acinetobacter calcoaceticus</i>	
<u>Not classified</u>	
<i>Xantomonas maltophila</i>	G
<i>Sphingosum spiritovarum</i>	

LITERATURE CITED

- Fretey, J., Lescure, J., Sanite, L. 1986. Fonctionnement de l'écloserie d'oeufs de Tortues Luths des Hattes - Ya:lima:po (Guyane française). Pp. 191-196. In : Le littoral guyanais, fragilité de l'environnement. Nature Guyanaise., 237 pp.
- McFadden, T.W. 1969. Effective disinfection of trout eggs to prevent transmission of Acromonas liquefaciens. J. Fish. Res. Bd Canada. 26(9): 2311-2318.

Figure 1

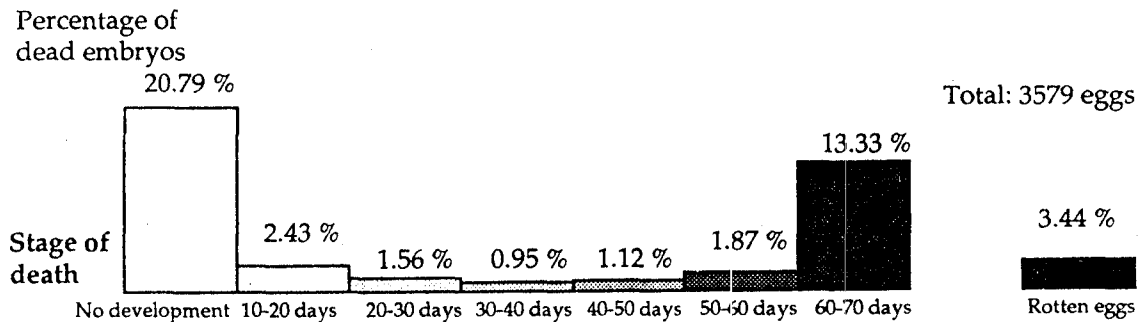
Hatching successful results in the hatchery of Les Hattes-Ya:lima:po in 1986, 1988 and 1989



In 1987 two rooms were built within the hatchery and no incubation could be done.

Figure 2

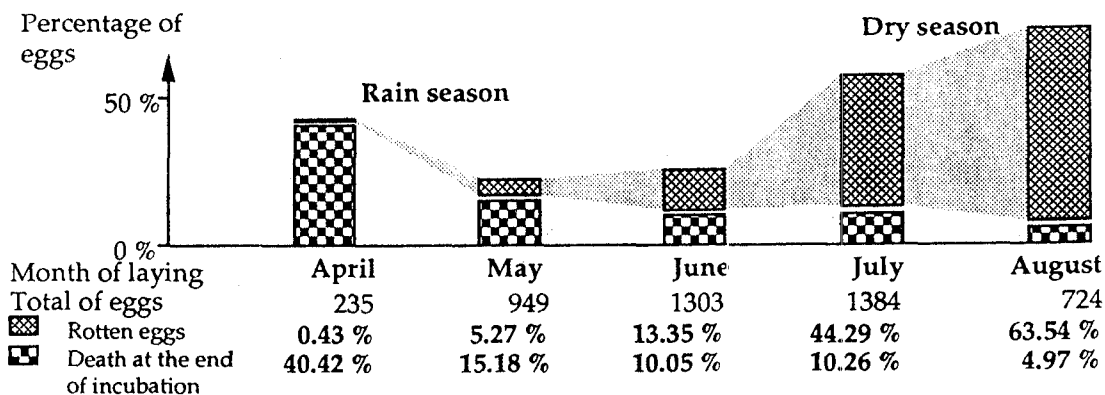
Death of embryos during the incubation : Two most sensitive stages



The embryos at the stages "No development" and "60-70 days" appear to be the most sensitive. The stage "No development" include unfertilized eggs and embryos dead between 0 and 10 days. These data are from the 1989 experiments but the same proportions have been obtained in 1986 and 1988.

Figure 3

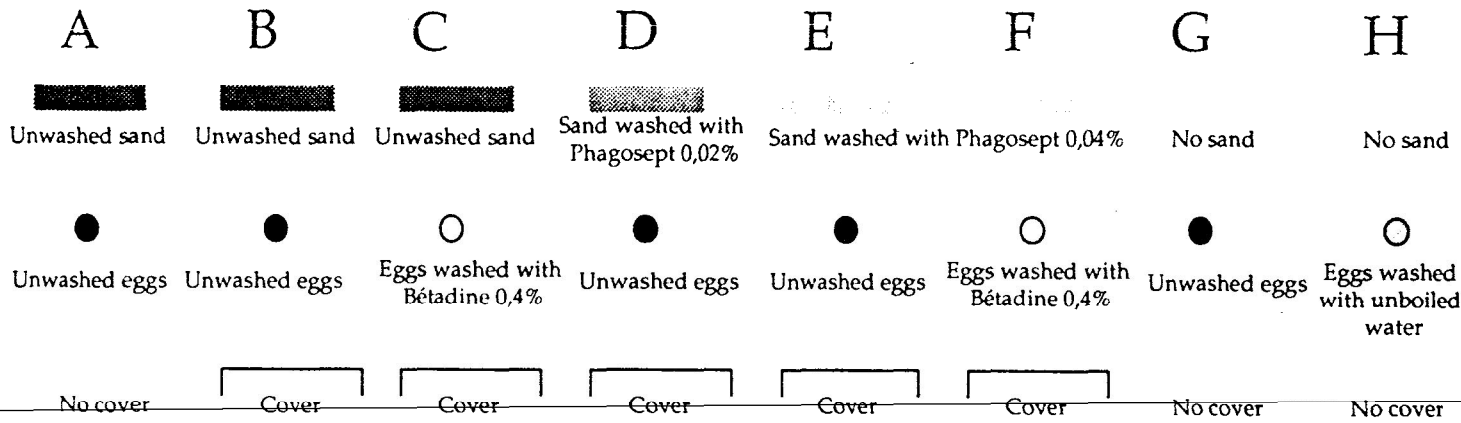
Influence of the beginning incubation time : Most significant results (from 1986)



We can forward two reasons to explain those differences of mortality in function of the laying month, but we don't have any information to confirm any of them :

- The gradient of humidity and temperature along the months (rain season to dry season) ,
- The females laying in August are probably at the end of their laying period by that time.

DESCRIPTION OF THE EXPERIMENTS IN 1989



231

RESULTS OF EXPERIMENTS





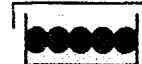
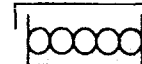


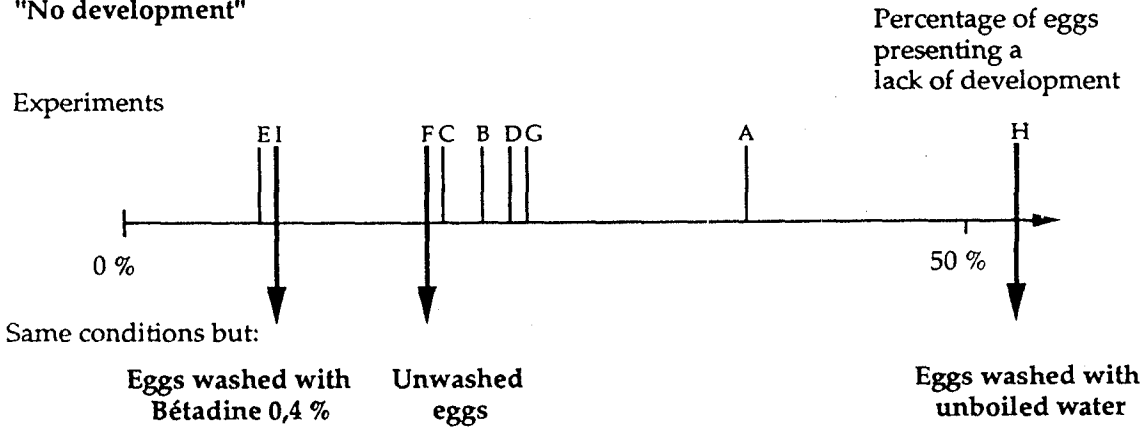
	A	B	C	D	E	F	G	H
								
Number of boxes	5	17	6	6	9	5	7	3
Number of eggs	182	1005	307	395	395	237	531	169
Percentage of hatchling alive	19.54 %	58.63 %	75.58 %	65.17 %	62.03 %	73.62 %	29.01 %	16.87 %

Figure 5

**Analysis of the results of the 1989 experiments:
some information about the best conditions of incubation**

To explain the two main causes of death in 1989 "No development of the embryo" and "Embryo dead at the end of the incubation", the different experiments are sorted along a line in function of the percentage of eggs dead at this stage. The percentage of "Dead at the end of incubation" is computed from a total number of eggs equal to the number of embryos alive at this stage ("Hatchling alive" + "Dead at the end of incubation").

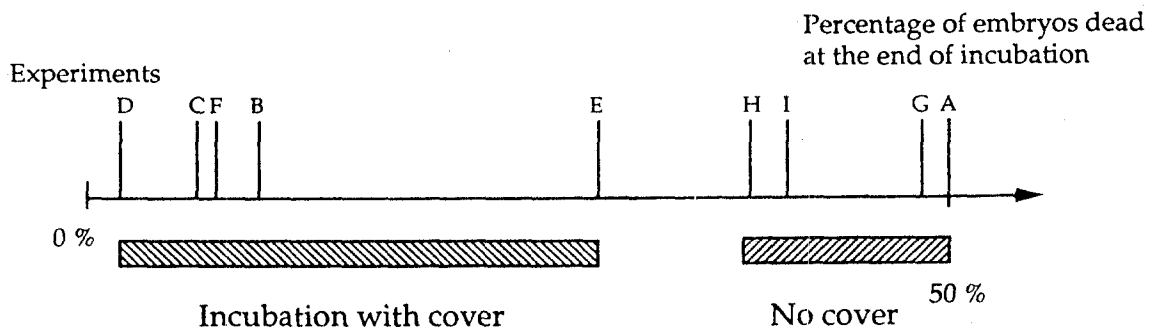
"No development"



Bétadine is iodinated polyvinylpyrrolidone or PVP-I

Egg washing with Bétadine 0.4 % seems to be a good treatment against the lack of development of eggs. The same conclusion is obtained with other experiments, but it seems that the egg washing can be replaced by sand washing with the same result. Egg washing and/or sand washing is particularly active against rotting of eggs.

"Dead at the end of incubation"



Absence of cover on the box seems to be an important factor in the death of the embryo at the end of incubation. The addition of sand does not seem to be determinant for successful incubation.