

PRELIMINARY RESULTS ON THE SOUND PRODUCTION IN OPHIDION ROCHEI

Eric Parmentier¹, Branko Dragicevic², Yves-Eric Corbisier¹, Grégory Bouillac¹, Jakov Dulčić²

¹Laboratoire de Morphologie Fonctionnelle et Evolutive, Université de Liège, Liège, Belgium

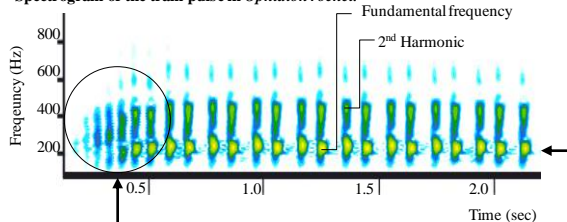
²Institute of Oceanography and Fisheries, POB 500, 21000 Split, Croatia



Specimens of Cusk-eels *Ophidion rochei* were recorded for the first time.

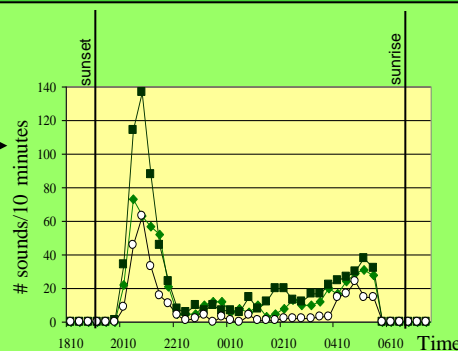
Passive acoustic detection highlight their nocturnal activities.

Spectrogram of the train pulse in *Ophidion rochei*.

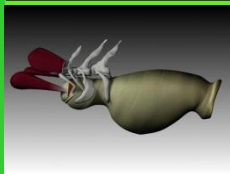


Sounds last between 1 and 3 sec, and consist of trains of 19 to 35 pulses having an average length of 26ms. The sonogram of the chatter recording consisted of a series of frequency pulses of 180-200 Hz with at least one harmonic.

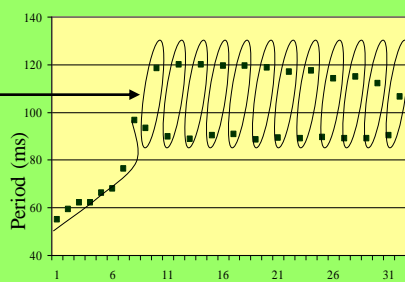
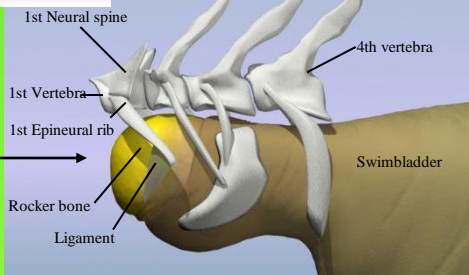
In each train, the pulse period and intensity raise to reach a cruising speed in which the pulses are grouped in pairs.



Ophidion rochei. Number of calls per 10 minutes at three different sites.

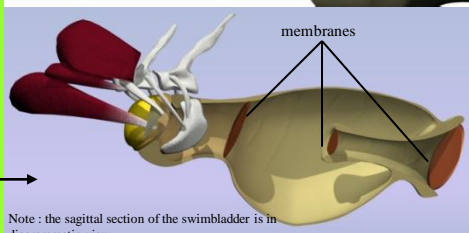
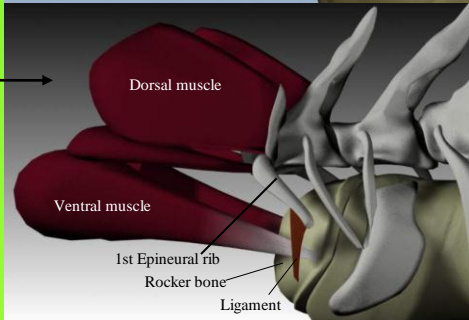


Left lateral views of the sound producing mechanism in males *Ophidion rochei*.

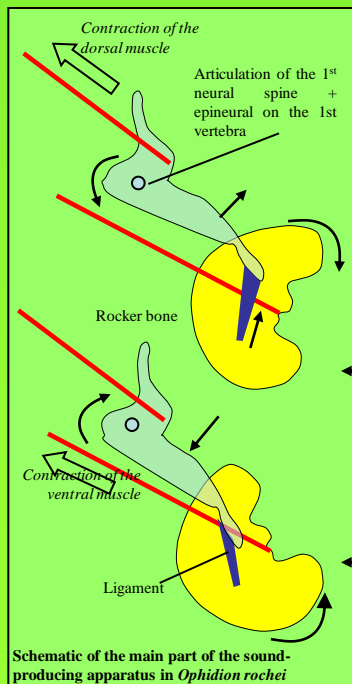


Periods of the different pulses in a given call in *Ophidion rochei*

The sound producing mechanism in *O. rochei* implies mainly the first vertebra, the rocker bone, sonic muscles originating on the head and the swim bladder specializations with the presence of an inner cone (megaphone ?) and three membranes.



Note : the sagittal section of the swimbladder is in diagrammatic view



Schematic of the main part of the sound-producing apparatus in *Ophidion rochei*

Sounds should be produced by the vibration of the three membranes in response to the alternate contraction of dorsal and ventral sonic muscles.

The contraction of the dorsal muscle originates the first neural arch + epineural to pivot rostrally around its articulations on the first vertebral body, and the counter-clockwise rotation of the rocker bone, pushing the membranes backward.

The contraction of the ventral muscle originates the clockwise rotation of the rocker bone, pulling the SWB membranes forward.