

**NATIONAL BIORESOURCE DEVELOPMENT BOARD**

Dept. of Biotechnology  
Government of India, New Delhi

For office use:
-----------------

**MARINE BIORESOURCES**

FORMS DATA ENTRY: Form- 1(general) Ref. No.:  
(please answer only relevant fields; add additional fields if you require)

Fauna : √	Flora	Microorganisms
General Category : Invertebrata (Zooplankton), Chaetognatha		
Scientific name & Authority : <i>Sagitta lyra</i> Krohn, 1853 Common Name ( if available): Arrow worm		
Synonyms	Author( s)	Status
<i>Pseudosagitta grimaldi</i>	Germain and Joubin	1912
<i>Sagitta lyra – gazellae</i>	Ghirardelli	1950
	Hamon	1952
<i>Sagitta lyra typica</i>	Ghirardelli	1950
	Hamon	1952
Classification:		
Phylum: Chaetognatha		Sub-Phylum:
Super class:	Class:	Sub- Class:
Super Order:	Sub Order:	
Super Family:	Family:	Sub-Family:
Genus: <i>Sagitta</i>	Species: <i>lyra</i>	
Authority: Krohn		
Reference No.:		
Krohn, A. 1853. Nachtragliche Bemerkungen u. den Bau der Gattung <i>Sagitta</i> , nebst der Beschreibung einiger neuen Arten. Arch. Naturgesch., <b>19</b> : 266-281.		
Geographical Location:		
This is an oceanic, cosmopolitan species of warm and temperate regions of Atlantic and Indian Ocean and of the Kuroshio region of Pacific. In the Indian Ocean <i>S. lyra</i> is more abundant on the western than on the eastern side, in a region influenced by West Australian current and extending to subtropical convergence.		
Latitude: Extends to 37° S	Place:	
Longitude:	State:	

Environment

Fresh water: Yes/ No

Habitat : Marine

Salinity :

Brackish : Yes/ No

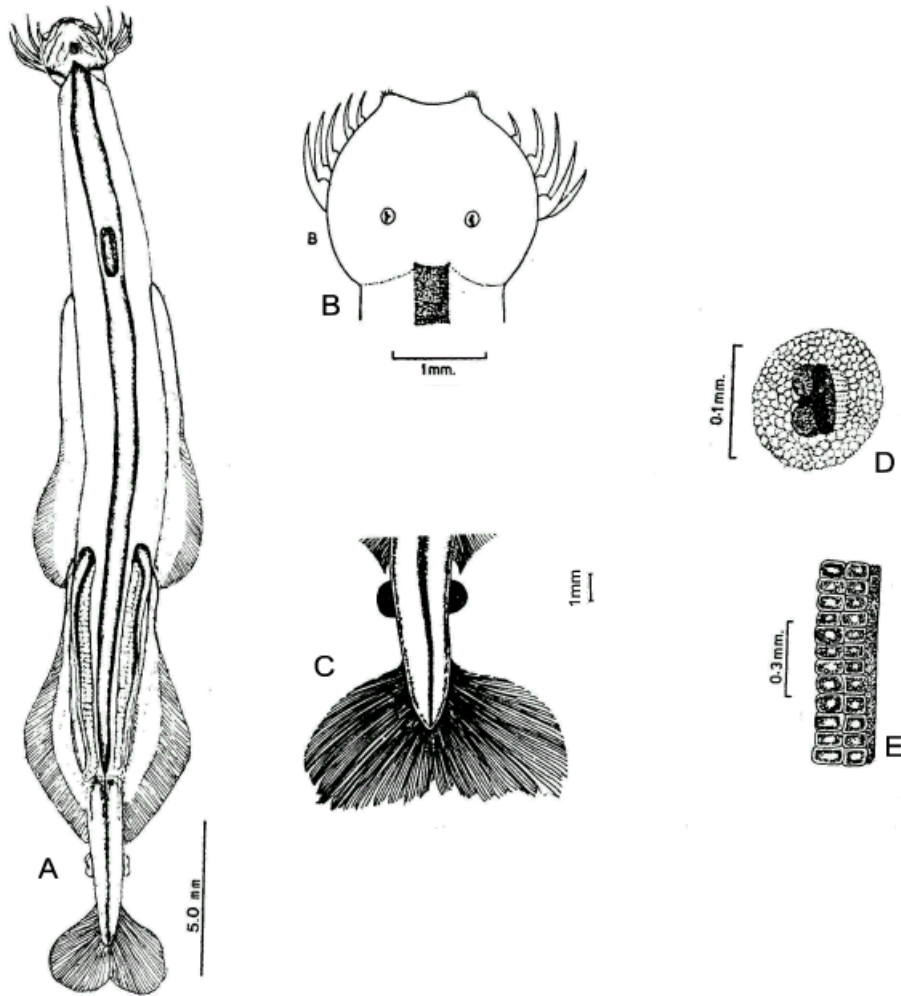
Migrations : Perform Vertical migrations.  
This can be diurnal in relation  
to size/stage of maturity, light  
intensity or otherwise

Temperature :

Salt water : Yes ✓/ No

Depth range: 2000-200 m  
South of 30°S - 125 – 0 m.

Picture (scanned images or photographs of adult / larval stages )



*Sagitta lyra*

A – Dorsal view; B – Head;

C – Details of posterior part of tail and seminal vesicles (dorsal view);

D – Eye; E – Arrangement of ova in the ovary (dorsoventral view).

DATA ENTRY FORM: Form- 2(Fish / shellfish / others )  
 (please answer only relevant fields ; add additional fields if you require)  
 Form –1 Ref.No.:

IMPORTANCE

Landing statistics (t/y) : from                      to                      Place :                      Ref . No.:

Main source of landing: Yes/ No                      Coast: east/ west

Importance to fisheries:

Main catching method :

Used for aquaculture : yes/ never/ rarely

Used as bait : yes/no/ occasionally

Aquarium fish : yes/ no/ rarely

Game fish : yes/ no

Dangerous fish : poisonous/ harmful/ harmless

Bioactivity : locally known/ reported/ not known                      Details:

Period of availability : Throughout the year – yes/ no                      If no, months:

SALIENT FEATURES :

Morphological:

Diagnostic characteristics:

*Sagitta lyra* is one of the larger species of the genus *Sagitta* from mesoplanktonic realms. Body is transparent, flabby and flexible. Trunk widest at about midlength. Constriction at tail septum is well developed. Longitudinal muscles are thin and weak and lateral fields are wide. Intestinal diverticula are absent.

Head is broad and well differentiated from the trunk by a neck. Tail constitutes 14 to 18 percent of total length. Eyes oval in shape with a pigmented region at the centre. Collarlet absent. Corona ciliata pear-shaped, beginning behind eyes and scarcely extending into trunk. Ventral ganglion is small compared with the body size and located above the level of the beginning of anterior fins.. Anterior and posterior fins connected at each side by a soft thick unstructured bridge. The anterior fins are longer than posterior fins and reach to a level close to posterior end of ventral ganglion. Anterior part of fins are rayless, the posterior and outer part are rayed. Posterior fins are wider than the anterior lateral fins and more than 75 per cent of these fins are seen in the trunk. The inner region of these fins is rayless. Caudal fin is bifurcated into two equal oval lobes by a small fissure at the centre of the fin.

Sex attributes:

Hermaphrodite. Male gonads being located in the tail segment, the female in the posterior part of the trunk. Though hermaphrodite cross – fertilization by copulation is the rule.

Descriptive characters:

Ovaries are long tubes and when fully mature extending to anterior end of anterior fins. Ova round and arranged in four dorso-ventral rows. Seminal vesicles oval in shape closer to the end of posterior lateral fins. They break open along the middle region through which the sperms are liberated.

Meristic characteristics:

Hooks vary from 3 to 9 on each side. Anterior and posterior teeth vary respectively 6 to 8 and 3 to 12. The low number of hooks and teeth being observed in mature specimens.

Feeding habit: Active, well armed, voracious animals.

Main food : Crustaceans, hydromedusae, other chaetognaths, fish larvae.

Feeding type : Carnivore.

Additional remarks:

Size and age:

Maximum length (cm) (male / female/ unsexed ) Ref. No.:

Total length when fully mature ranges from 35 to 38 mm.

Average length (cm) (male / female / unsexed ) Ref. No.:

Length – Range and average: 17 - 38 (26) mm

Maximum weight : (g) (male / female / unsexed ) Ref. No.:

Average weight :(g) (male / female / unsexed ) Ref. No.:

Longevity (y) (wild) : (captivity ) Ref. No.:

Length / weight relationships:

Eggs and larvae: Characteristics: Abundance:	Ref. No.:
Biochemical aspects: Proximate analysis: moisture/ fat/ protein/ carbohydrate/ash Electrophoresis:	Ref. No. Ref. No.
<b>SPAWNING INFORMATION:</b>	
Locality: Season: Fecundity: Comment:	Main Ref:
<b>MAJOR PUBLICATIONS (INDIAN):</b> (include review articles, monographs, books etc.)	
Vijayalakshmi Nair, R. 1977. Chaetognaths of the Indian Ocean. <i>Proc. Symp. Warm Water Zoopl. Spl. Publ. UNESCO/NIO</i> . 168-195.	
Vijayalakshmi Nair, R. 1978. Bathymetric distribution of chaetognaths in the Indian Ocean. <i>Indian J. Mar. Sci.</i> 7: 276-282.	
Srinivasan, M. 1979. Taxonomy and ecology of Chaetognatha of the west coast of India in relation to their role as indicator organisms of watermasses. <i>Zool. Surv. India, Tech. Monogr.</i> No. 3. 1-47.	
Pierrot – Bults, A.C and Vijayalakshmi Nair, R. 1991. Distribution patterns in Chaetognaths. <i>In: The Biology of Chaetognaths</i> . Q.Bone, H. Kapp and A. C. Pierrot – Bults (Eds.). Oxford Science Publications, Oxford University Press, Oxford, New York, Tokyo. 86-116.	
<b>LIST OF INDIAN EXPERTS</b> (Name, address, phone, fax, e-mail etc.)	
Dr. Vijayalakshmi R. Nair HB/50, “Vijaya” South Bridge Avenue, Panampilly Nagar, Kochi - 682036 Tel: 0484 - 2316999 Fax: 0484 - 2324972 e – mail: <a href="mailto:vijayalakshmi40@hotmail.com">vijayalakshmi40@hotmail.com</a>	
<b>ACKNOWLEDGEMENT:</b> (List of persons who contributed , modified or checked information)	