

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 : <input checked="" type="checkbox"/>	Flora	Microorganisms
General Category : Invertebrata (Zooplankton), Chaetognatha		
Scientific name & Authority : <i>Sagitta maxima</i> (Conant) 1896 Common Name (if available) : Arrow worm		
Synonyms:	Author(s)	Status
<i>Sagitta lyra</i>	Michael	1911
	Tchindonova	1955
Classification:		
Phylum: Chaetognatha	Sub- Phylum	
Super Class :	Class :	Sub- Class:
Super Order:	Order:	Sub Order :
Super Family:	Family :	Sub-Family:
Genus : <i>Sagitta</i>	Species : <i>maxima</i>	
Authority: Conant		
Reference No.		
Conant, F.S., 1896. Notes on the Chaetognatha . <i>Ann. Mag. Nat. Hist.</i> (Ser.6) 18 : 201-214. Also in Johns Hopkins Univ. Circulars 15 : 82-85.		
Geographical Location:		
This is a cosmopolitan bathyplanktonic oceanic species seen in the Atlantic, Indian and Pacific Oceans. In Indian Ocean north of 10° N the species is absent or sparsely represented. In the northern Indian Ocean, this species usually found between 1000-500 m level and south of Equator reached the 500-250 m stratum. South of subtropical convergence it occupies the depth between 250 and 125 m.		
Latitude: 10° N to subtropical convergence.	Place:	
Longitude:	State:	

Environment

Fresh water: Yes/ No

Habitat : Marine

Salinity :

Brackish : Yes/ No

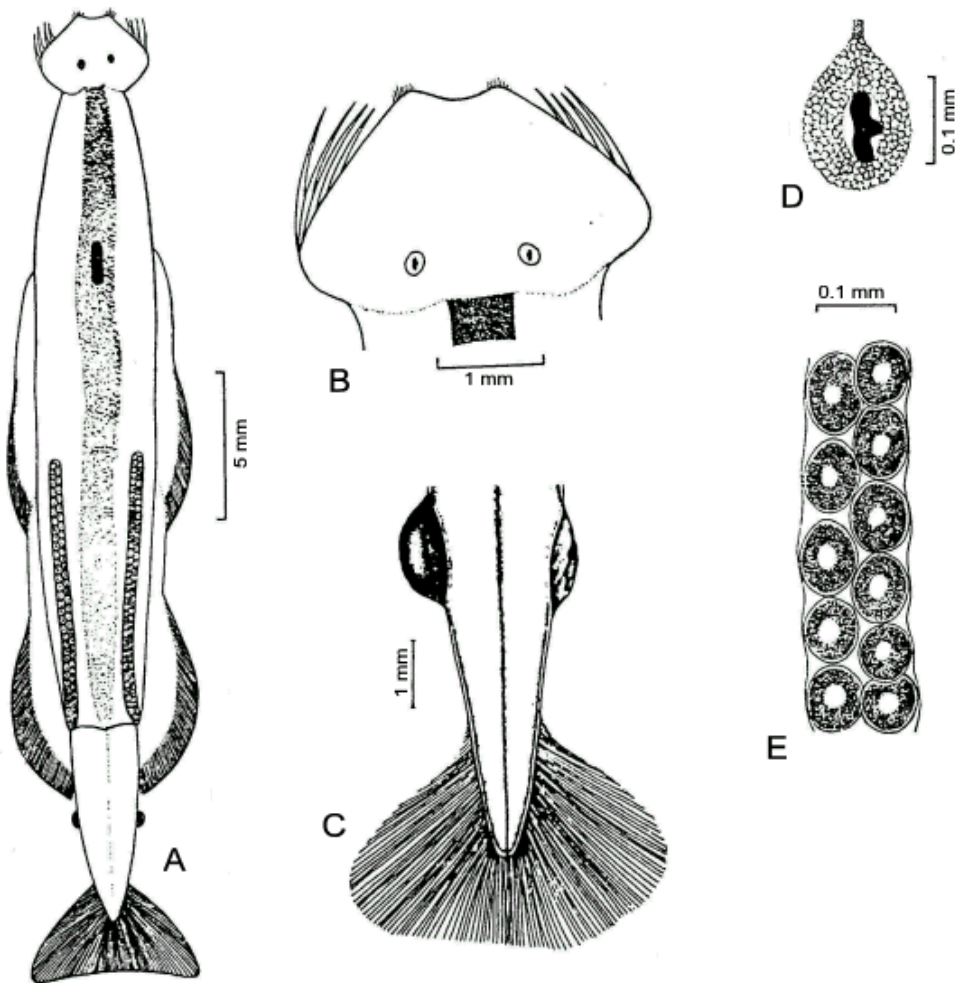
Migrations : Perform Vertical migrations.
This can be diurnal in relation
to size/stage of maturity, light
intensity or otherwise

Temperature :

Salt water : Yes/ No

Depth range: Varies depending on latitude
between 1000 and 125 m.

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



Sagitta maxima

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.

<p>DATA ENTRY FORM: Form- 2(Fish / shellfish / others) (please answer only relevant fields ; add additional fields if you require) Form –1 Ref.No.:</p>			
<p>IMPORTANCE</p>			
Landing statistics (t/y) :	from	to	Place :
Main source of landing:	Yes/ No		Coast: east/ west
<p>Importance to fisheries: Main catching method :</p>			
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:
<p>SALIENT FEATURES :</p>			
<p>Morphological: Diagnostic characteristics:</p>			
<p><i>Sagitta</i> maxima is one among the largest species of the phylum Chaetognatha. Body is highly transparent, flaccid and flexible due to weak longitudinal muscles. Trunk is widest at about midlength and has clear constriction at tail septum. Lateral fields wide. Intestinal diverticula are absent.</p>			
<p>Head of medium size, wider than long and differentiated from the trunk by a well defined neck. Tail constitutes 19-25 per cent of total length. Eyes are large, oval, and have a small pigmented region at the centre and the peripheric cells are rounded. Collarlette is absent. Ventral ganglion is situated at ¼ distance from the anterior end of the animal. Anterior and posterior fins connected at each side by a narrow rayless bridge. Anterior fins are longer and narrower than posterior fins. Anterior fins begin at the level of the middle region of ventral ganglion and posterior part rayed. Posterior fins are wider than anterior fins, with a thick central rayless zone and outer part is rayed. More than 70% of the posterior fins are seen on the trunk.</p>			
<p>Sex attributes:</p>			
<p>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.</p>			
<p>Descriptive characters:</p>			
<p>Ovaries are long and slender tubes, which do not fill the body cavity. They reach upto the level of anterior end of the ventral ganglion when fully mature. Ova are round and arranged in two rows. Seminal vesicles ovoid, slightly closer to posterior fins and separated from tail fin. They break open along the lateral margins, through which the sperms are liberated.</p>			

Meristic characteristics:

Prehensile hooks are 6 to 8 in number. Anterior teeth ranges from 3 to 10 while posterior teeth number from 5 to 9.

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 mature >90mm

Average length (cm) (male / female / unsexed)

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:

Ref. No.:

Eggs and larvae: Characteristics: Abundance:	Ref. No.:
Biochemical aspects: Proximate analysis: moisture/ fat/ protein/ carbohydrate/ash Electrophoresis:	Ref. No. Ref. No.
SPAWNING INFORMATION:	
Locality: Season: Fecundity: Comment:	Main Ref:
MAJOR PUBLICATIONS (INDIAN): (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.	
LIST OF INDIAN EXPERTS (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: vijayalakshmi40@hotmail.com	
ACKNOWLEDGEMENT: (List of persons who contributed , modified or checked information)	