

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)

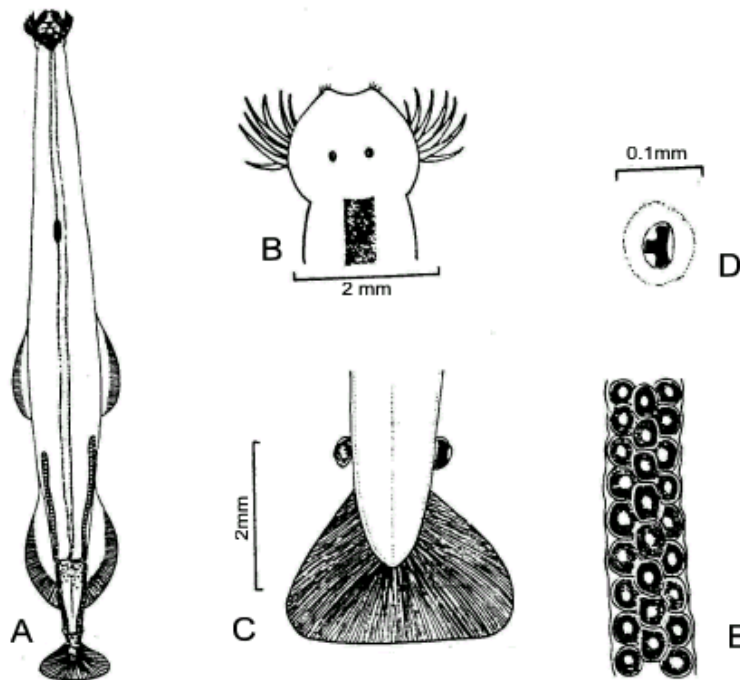
Fauna : <input checked="" type="checkbox"/>	Flora	Microorganisms
General Category : Invertebrata (Zooplankton), Chaetognatha		
Scientific name & Authority : <i>Sagitta hexaptera</i> d'Orbigny, 1843 Common Name (if available): Arrow worm		
Synonyms	Author(s)	Status
<i>Sagitta hexaptera f. magna</i>	Germain and Joubin	1916
<i>Sagitta gazellae</i>	Furnestin	1953 (but rectified in 1955)
Classification:		
Phylum: Chaetognatha	Class:	Sub-Phylum:
Super class:	Sub Order:	Sub- Class:
Super Order:	Family:	Sub-Family:
Super Family:	Species: <i>hexaptera</i>	
Genus: <i>Sagitta</i>		
Authority: d'Orbigny		
Reference No.:		
d'Orbigny, A., 1843. Voyage dans l' Amerique meridionale, <i>Mollusques, Paris, 5</i> : 140-144.		
Geographical Location:		
This is a cosmopolitan epiplanktonic species inhabiting the temperate and warm regions of the oceans. In Indian Ocean numerical representation is low, but distribution of the species extends southwards to about 42°S. They reach the adjacent Gulf of Aden and Red Sea also.		
Latitude: Extends upto 42°S	Place:	
Longitude: 20° - 120°E	State:	

Environment

Fresh water: Yes/ No Habitat : Marine Salinity :
Brackish : Yes/ No Migrations : Perform Vertical migrations. Temperature :
This can be diurnal in relation
to size/stage of maturity, light
intensity or otherwise

Salt water : Yes ✓/ No Depth range: 200-0 m. Seldom found below 200 m.

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



Sagitta hexaptera

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> <p>Landing statistics (t/y) : from to Place : Ref . No.:</p> <p>Main source of landing: Yes/ No Coast: east/ west</p> <p>Importance to fisheries:</p> <p>Main catching method :</p> <p>Used for aquaculture : yes/ never/ rarely</p> <p>Used as bait : yes/no/ occasionally</p> <p>Aquarium fish : yes/ no/ rarely</p> <p>Game fish : yes/ no</p> <p>Dangerous fish : poisonous/ harmful/ harmless</p> <p>Bioactivity : locally known/ reported/ not known Details:</p> <p>Period of availability : Throughout the year – yes/ no If no, months:</p>			
<p>SALIENT FEATURES :</p> <p>Morphological:</p> <p>Diagnostic characteristics:</p> <p><i>Sagitta hexaptera</i> is one of the largest chaetognaths. Body is highly transparent, tumid, flaccid, but retains its form very well due to strong longitudinal muscles. The body is widest at about its mid length. Lateral fields are large. Intestinal diverticula are absent.</p> <p>Head is smaller than the size of the body and clearly demarcated from the trunk by a neck. There is slight constriction at tail septum. Collarette absent. Eyes placed closer to each other. Eyes are oval with longest axis parallel to the longitudinal axis of animal. The pigmented region has three branches leaving three clear spaces. Corona ciliata is pear-shaped extending from level of eyes to neck. Tail segment varies between 17 to 20 per cent of total length. Constriction at the tail septum is not very prominent. Ventral ganglion is situated roughly at the central region between the tip of head and posterior end of anterior fins. Anterior fins are shorter, with rays only at the outer edge. Anterior fins placed midway between ventral ganglion and caudal septum. Posterior fins triangular and longer and wider than anterior fins. They extend from trunk to about midlength of tail but apart from seminal vesicles. One third of posterior fin is on tail. Anterior and internal part of the posterior fins are rayless. The rayed zone extends along outer part of fins.</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>Ovarian tubes are long, slender and reach up to ventral ganglion in fully mature specimens. Ova roundish and arranged in three rows. Seminal vesicles are closer to the caudal fin and separated from the caudal fin by a gap equal to its length. They are spherical in shape and break open along the mid dorsolateral region through which the sperms are liberated.</p>			

Meristic characteristics:

Hooks wide, strongly curved and vary from from 7 to 10 on either side of the head.. Number of anterior teeth usually 3 and ranges from 2 to 4 at each side and are long and fine with wide base. Posterior teeth vary between 2 and 6.

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.:

Normally upto 40 mm. At times reach a length of 70 mm in colder waters when the animal is still immature.

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

Ref. No.:

Range and average length: 22 - 40 (32) 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.
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.	
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