

**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 zetesios</i> Fowler, 1905		
Common Name ( if available): Arrow worm		
Synonyms	Author( s)	Status
<i>Sagitta planctonis</i>	Michael	1911
	Ritter – Zahony	1911
	Germain and Joubin	1916
	Kramp	1917
	Burfield and Harvey	1926
	Burfield	1930
	Grey	1930
	Bollman	1934
	John	1937
	Serene	1937
	Thiel	1938
	Tokioka	1939
	Schilp	1941
	Thomson	1947
	Fraser	1949
	Moore	1949
	George	1952
	Tchindonova	1955
	Hida	1957
	Fagetti	1958
	Bieri	1959
	Le Brasseur	1959
	Owre	1960
	Furuhashi	1961
	Sund	1961
	Wickstead	1961
	Furnestin	1962
	Grice and Hart	1962
<i>Sagitta equatorial</i>	Gray	1922

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>zetesios</i>	
Authority: Fowler		
Reference No.:		
Fowler, G.H., 1905. Biscayan plankton of H.M.S. Research. Pt. III. Chaetognatha. <i>Trans. Linn. Soc. Lond.</i> , <b>10</b> : 55-87.		
Geographical Location:		
This is an oceanic, cosmopolitan, mesoplanktonic species extending to appropriate depths along temperate and warm oceanic regions. In the Indian Ocean it is distributed along the tropical equatorial and central waters extending to south to about 37°S. The species is more common south of 10°N.		
Latitude: Extends to 37°S		Place:
Longitude:		State:

Environment

Fresh water: Yes/ No

Habitat : Marine

Salinity :

Brackish : Yes/ No

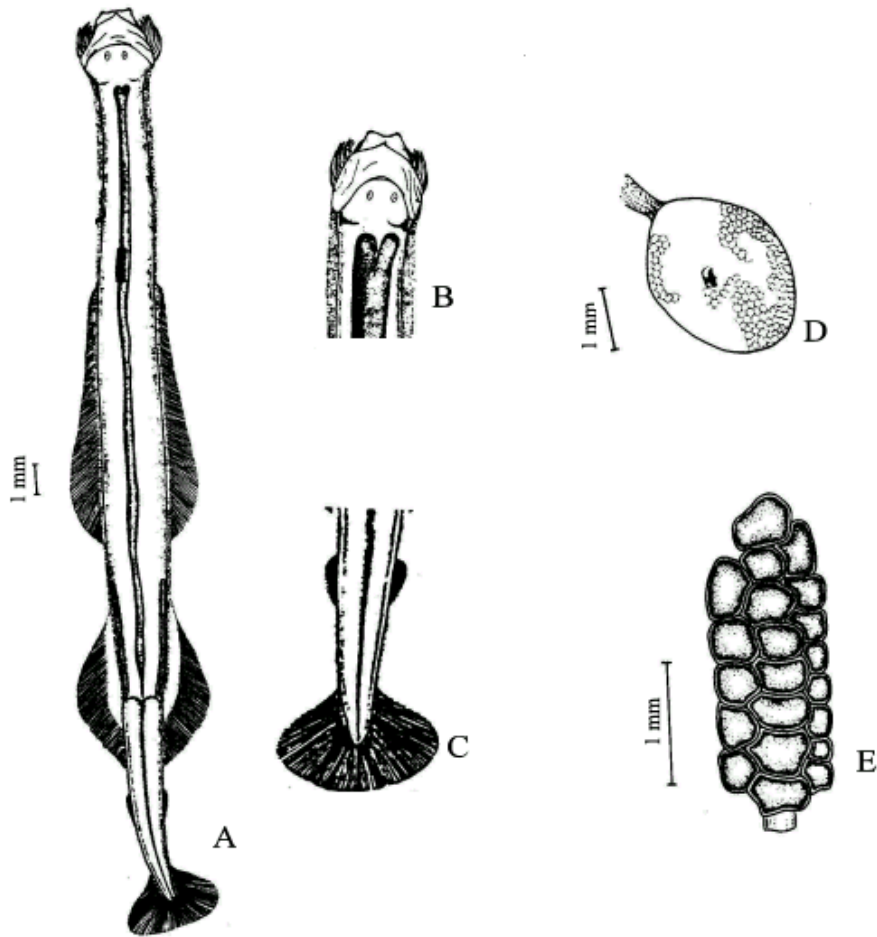
Migrations : Perform Vertical migrations.

Temperature :

This can be diurnal in relation to size/stage of maturity, light intensity or otherwise

Salt water : Yes ✓/ No Depth range: 1000 - 250 m. South of 33°S – 200-0 m.

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



*Sagitta zetesios*

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>The body is opaque and strong due to the presence of lateral strong lateral muscles. Body has same width from head to tail septum. Lateral fields are narrow. Intestinal diverticula are present.</p> <p>Head is roundish and of medium size. Neck is well marked. Tail forms 20 to 26 per cent of total length. Eyes are large and oval and pigmented region is small formed by 2 large wings and a small one. Collarette extends along body as a thick and dense layer from head to tail. Collarette appears as a connecting bridge joining the posterior and anterior part of paired fins at each side. Thick layers of collarette extend along internal part of paired fins. Ventral ganglion is located just in front of anterior fins. Anterior fins begin at level of posterior end of ventral ganglion. They are narrower and longer than posterior fins. They are fully rayed. Posterior fins are triangular in shape and extend to about upper third of tail segment. They do not extend up to seminal vesicles. They are widest at caudal septum. Rayless zone extends from anterior internal part of fins to anterior part of the fin on the tail region. As a thick collarette covers the internal part of fins they appear in part to be embedded in the collarette. Their length on the trunk is about twice the extend of the tail.</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 reaching midway between neck and ventral ganglion in mature specimens. The ovarian tubes have thick walls containing large amounts of fatty material. Ova are small and arranged dorsoventrally in three rows. Seminal vesicles are oval in shape and closer to posterior fins but away from tail fin. The vesicles break along a lateral bridge, liberate sperms and leaves two flaps.</p>			

Meristic characteristics:

Number of hooks vary from 8 to 11 and are more curved and number reduces as it matures. Anterior and posterior teeth respectively range from 8 to 12 and 15 to 22 at each side..

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.:

Length at maturity reaches 39 to 43 mm.

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

Ref. No.:

Range and average length: 20 - 43 (33) 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.)	
Fowler, G.H., 1905. Biscayan plankton of H.M.S. Research. Pt. III. Chaetognatha. <i>Trans. Linn. Soc. Lond.</i> , <b>10</b> : 55-87.	
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> <b>7</b> : 276-282.	
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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