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 : *Sagitta robusta* Doncaster, 1903
Common Name (if available): Arrow worm

Synonyms	Author(s)	Status
Sagitta hispida	Aida	1897
	Michael	1911
	Rao	1958
	Rao and Ganapati	1958
Sagitta ferox	Bieri	1957
	Sund and Renner	1959
	Tokioka	1959
	Sund	1961
Sagitta ferox americana	Tokioka	1959

Classification:
Phylum: Chaetognatha Sub-Phylum:
Super class: Class: Sub- Class:
Super Order: Sub Order:
Super Family: Family: Sub-Family:
Genus: *Sagitta* Species: *robusta*
Authority: Doncaster
Reference No.:
Doncaster, L., 1903. Chaetognatha, with a note on the variation and distribution of the group. *Fauna and Geography, Maldive-Laccadive, Arch*., **1**: 209-218.

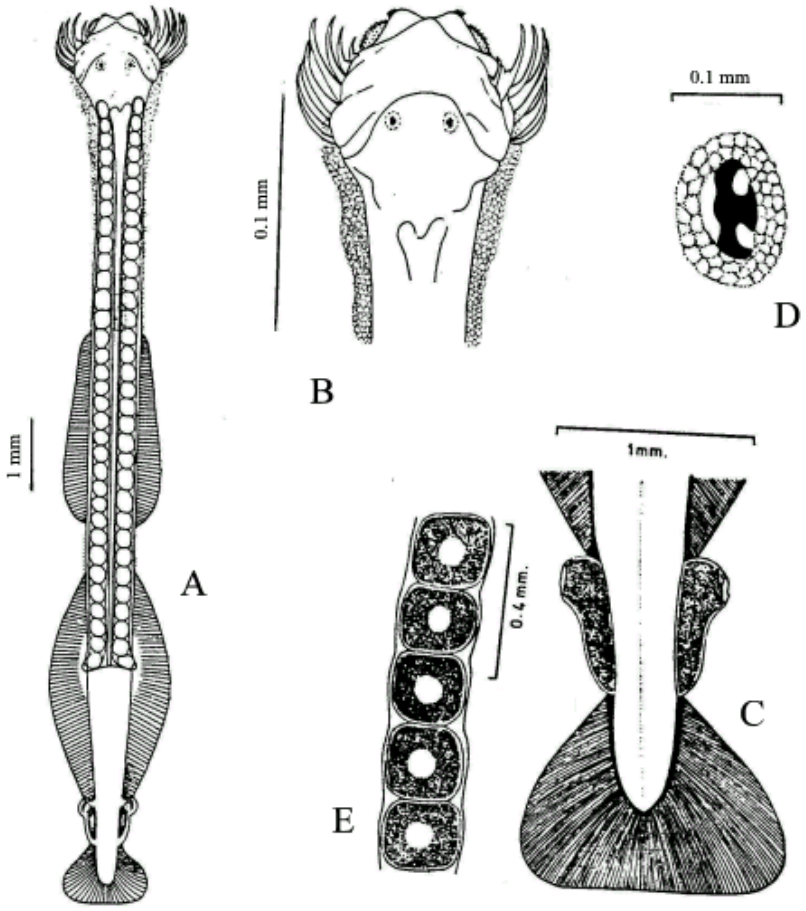
Geographical Location:
This is an epiplanktonic, oceanic tropico-equatorial species of Indo-Pacific. In the Indian Ocean the species is more abundant north of equator and extends to 34°S.

Latitude: Extends to 34°S Place:

Longitude: 25° - 110°E State:

Environment					
Fresh water:	Yes/ No	Habitat :	Marine	Salinity :	
Brackish :	Yes/ No	Migrations :	PerformVertical migrations. This can be diurnal in relation to size/stage of maturity, light intensity or otherwise	Temperature :	
Salt water :	Yes ✓/ No	Depth range:	0-200 m. Seldom below 250 m.		

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



Sagitta robusta

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.

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:

Body is strong, firm and opaque. The body is of uniform width from head to tail septum. The longitudinal muscles are thick and strong. Lateral fields are narrow. Intestinal diverticula are present.

The head is large prominent and well differentiated from trunk by a neck. Tail segment contributes 27 to 28 per cent of total length and well demarcated from the trunk by a tail septum. Eyes round and pigmented region similar in shape to that of *S. ferox*, but the large branches fork out, which is not the case in *S. ferox*. Collarette is well developed from neck to ventral ganglion and further extends as a thin layer to the tip of tail but thickening again in front of seminal vesicle. Ventral ganglion is situated roughly at 1/3 distance from the anterior end of the animal. Anterior fins roundish but smaller than posterior fins and begin from posterior end of ventral ganglion. Fins are fully rayed. Posterior fins are roundish extending to seminal vesicles. They lie more on tail than on trunk and covered by rays except for a small area at the opening of the oviducts.

Sex attributes:

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

Descriptive characters:

Ovaries are wide and reach up in fully mature specimens to the neck region filling the trunk cavity. Ova spherical and arranged in a single row. Seminal vesicles touch both posterior fins and tail fin. Seminal vesicles are oval in shape with an anterior broad head region. The seminal vesicles break open along the anterolateral margin through which the sperms are liberated.

Meristic characteristics:

Hooks strong, well curved and the number varies marginally between 7 and 8 on each side. Anterior teeth number 6 to 9, while posterior teeth number between 10 to 15.

Feeding habit: Active, well armed, voracious animals.
Main food : Crustaceans, hydromedusae, other chaetognaths, fish lavae.
Feeding type : Carnivore.

Additional remarks:

Size and age:
Maximum length (cm) (male / female/ unsexed) Ref. No.:
Total length when fully mature varies from 8 to 12 mm.

Average length (cm) (male / female / unsexed) Ref. No.:
Range and average length: 6 - 12 (10) 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 relationalships:

Eggs and larvae: Ref . No.:
Characteristics:
Abundance:

Biochemical aspects:
Proximate analysis: moisture/ fat/ protein/ carbohydrate/ash Ref. No.
Electrophoresis: Ref. No.

SPAWNING INFORMATION:
Locality: Main Ref:
Season:
Fecundity:
Comment:

MAJOR PUBLICATIONS (INDIAN):
(include review articles, monographs, books etc.)

Vijayalakshmi Nair, R. 1977. Chaetognaths of the Indian Ocean. *Proc. Symp. Warm Water Zoopl. Spl. Publ. UNESCO/NIO.* 168-195.

Vijayalakshmi Nair, R. 1978. Bathymetric distribution of chaetognaths in the Indian Ocean. *Indian J. Mar. Sci.* **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. *Zool. Surv. India, Tech. Monogr.* No. 3. 1-47.

Pierrot – Bults, A.C and Vijayalakshmi Nair, R. 1991. Distribution patterns in Chaetognaths. *In*: The Biology of Chaetognaths. 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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ACKNOWLEDGEMENT:
(List of persons who contributed , modified or checked information)