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 bipunctata* Quoy and Gaimard, 1827
Common Name (if available): Arrow worm

Synonyms	Author(s)	Status
Sagitta californica	Michael	1913
	Bieri	1957
	Sund	1961
Sagitta atlantica	Gray	1922
Sagitta hispida	Burfield and Harvey	1926
	George	1952
Sagitta multidentata	Hsu	1943

Classification:
Phylum: Chaetognatha Sub-Phylum:
Super class: Class: Sub- Class:
Super Order: Sub Order:
Super Family: Family: Sub-Family:
Genus: *Sagitta* Species: *bipunctata*
Authority: Quoy and Gaimard
Reference No.:

Quoy, J. and Gaimard, P., 1827. Observations zoologiques faites a bord de l'Astrolabe en Mai 1826 dans le detroit de Gibraltar. *Annls Sci. nat.*, **10**: 5-239.

Geographical Location:

This is an oceanic, cosmopolitan species of temperate and warm oceanic waters and adjacent seas indicating world wide distribution. In the Indian Ocean *S. bipunctata* is abundant north of equator. This species extends to Gulf of Aden, Somalian coast and Red Sea. The distributional limit in the Indian Ocean is 35°S.

Latitude: Extends to 35°S Place:

Longitude: 40° - 125°E State:

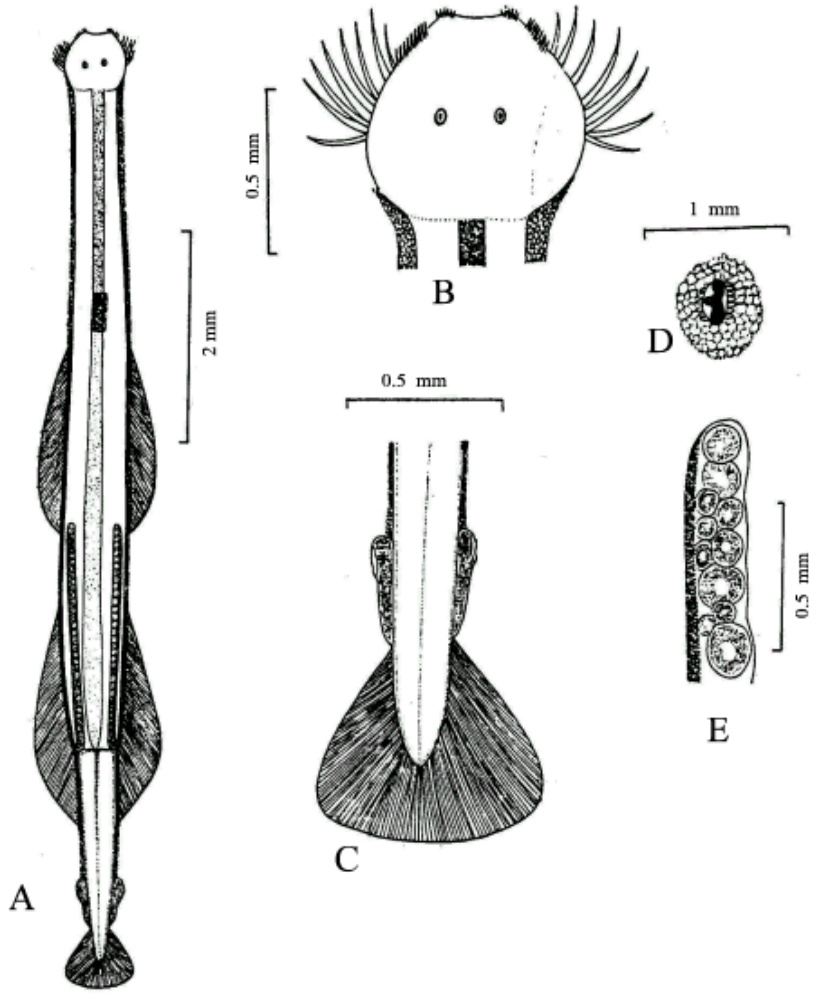
Environment

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: 250-0 m. Sparse between 500 – 250m.

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



Sagitta bipunctata

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 rigid, opaque due to strong longitudinal muscles. Width of the body is almost same from head to tail septum. Lateral fields are narrow. Intestinal diverticula are absent.

Head is slightly bigger than body with distinct neck covered by thick layer of collarette which extends upto the tip of the tail. Tail constitutes 22 to 24 per cent of total length and the constriction at the tail septum is very prominent. Eyes are small, roundish and pigment distributed in three branches. Ventral ganglion is situated just at the level of the origin of the anterior fins. Anterior fins wide, roundish, beginning at a level behind posterior end of ventral ganglion and are fully rayed. Posterior fins wider and longer than anterior fins, reaching maximum width at about the level of caudal septum. More than 60 per cent of the fins seen on the trunk segment and fins are fully rayed.

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, well developed and in mature specimens reach upto anterior fins. Ova are roundish, small and irregularly placed in one or two rows. Ova of different sizes and at various stages of development appear in ovary. Seminal vesicles are elongated with an anterior bulged portion. The posterior end of seminal vesicles are in touch with the tail fin. A wide gap is seen between the seminal vesicles and posterior lateral fins.

Meristic characteristics:

Number of hooks vary from 8 to 10 at each side. Anterior teeth total 5 to 8 at each side. Posterior teeth total 8 to 16 at each side.

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

Additional remarks:

Size and age: Maximum size ranged from 15 to 18.5 mm

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

Average length (cm) (male / female / unsexed) Ref. No.:
Range and average length : 9-18.5 (av.12) 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.

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)