

Article

## New records of Glyceridae (Annelida: Polychaeta) from South Andaman Coast, Andaman & Nicobar Islands, India

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### Abstract

Nine species belonging to *Glycera* were identified (*Glycera lapidum* Quatrefages 1866; *Glycera oxycephala* Ehlers 1887; *Glycera brevicirris* Grube 1870; *Glycera tessellata* Grube 1863; *Glycera nicobarica* Grube 1868; *Glycera posterobranchia* Hoagland 1920; *Glycera alba* O.F.Muller 1776; *Glycera africana* Arwidsson 1899 and *Glycera tridactyla* Schmarda 1861). The materials studied were collected during the macrobenthic intertidal samplings along the South Andaman coast. Eight of which are new records to the islands and confirmation of occurrence of *G.tessellata*. The taxonomic key for identification of *Glycera* from South Andaman coast is provided.

**Keywords** *Glycera*; polychaetes; new records; Andaman Coast; identification key.

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### 1 Introduction

Glycerids are commonly found in the soft bottom substrate such as sandy or muddy habitats. Though low in abundance, their distributional ranges have been recorded from intertidal to the deep sea (Fauchald 1977). The family Glyceridae Grube 1850 can easily be identified by the presence of prominent conical prostomium with four antennae and along eversible proboscis covered with various types of papillae and presence of two pairs of terminal jaws supported by ailerons. Goniadidae is the only family which commonly shares the similar characters with the Glyceridae. Goniadidae can be distinguished from Glyceridae by the presence of macrognaths and chevrons (Böggemann, 2006). Among all the valid genera of the family Glyceridae, most of the species which have been described represent the genus *Glycera* Savigny 1818. Böggemann (2002) has given valid status to 36 species under this genus in his detailed revision of the family Glyceridae. Later on, nine new species representing the same genus were described and added to present valid taxa list by various

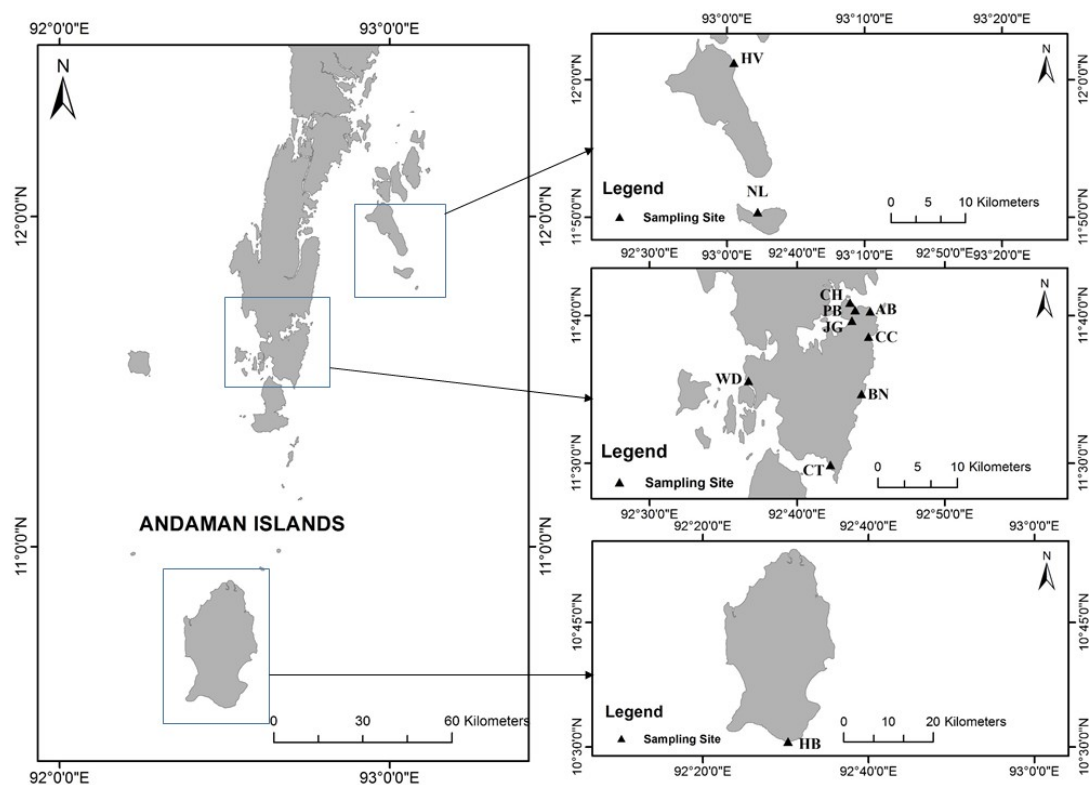
authors (Imajima, 2003, 2009; Rizzo et al., 2007; Böggemann, 2009; Böggemann et al., 2012; Magalhaes and Rizzo, 2012). The species belonging to the genus *Glycera* are mainly identified by the following characters; type of papillae present on the proboscis, structure of the aileron; shape and number of the prechaetal and postchaetal lobes and presence or absence of branchia on the parapodia and their relative position of origin of branchia with respect to parapodial lobes (Böggemann and Fiege, 2001).

Taxonomic information on Polychaetes diversity from Andaman and Nicobar Islands are scarce. Few authors have worked in this regions (Fauvel, 1953; Tampi and Rangarajan, 1964; Daniel and Ghosh, 1964; Hartman, 1974; Soota and Rao, 1977; Soota et al., 1980; Rajasekaran and Fernando, 2012; Gopal et al., 2014, 2016). The distributional records of six species of *Glycera* have been previously reported from the Andaman and Nicobar coast. *Glycera cirrata* Grube 1857, *Glycera prashadi* Fauvel 1932, *Glycera rouxii* Audouin & Milne Edwards 1833 and *Glycera tessellata* Grube 1863 have been recorded in Fauvel (1953). In their annotated checklist of polychaetes from Andaman and Nicobar Islands, Rajasekaran and Fernando (2012) have recorded two *Glycera* species; *Glycera longipinnis* Grube 1878 and *Glycera capitata* Örsted 1843. Taxonomic re-evaluation, revision, and validity of the species is required to be addressed in this region. Based on re-description (Böggemann 2002), earlier records of *Glycera* species (Fauvel, 1953; Rajasekaran and Fernando, 2012) from this region have been re-evaluated and given their valid synonyms and updated to the latest taxonomic validation. In this study, the synonyms have been taken into consideration for the *Glycera prashadi* Fauvel 1932 validated as *Glycera cinnamomea* Grube 1874; *Glycera longipinnis* Grube 1878 as *Glycera sphyrabranchia* Schmarda 1861. Present study describes the new distributional records of nine species (*Glycera lapidum* Quatrefages 1866; *Glycera oxycephala* Ehlers 1887; *Glycera brevicirris* Grube 1870; *Glycera tessellata* Grube 1863; *Glycera nicobarica* Grube 1868; *Glycera posterobranchia* Hoagland 1920; *Glycera alba* O.F.Muller 1776; *Glycera africana* Arwidsson 1899 and *Glycera tridactyla* Schmarda 1861) of the genus *Glycera* and further confirms the occurrence of *G. tessellata* Grube 1863 in the Andaman waters.

## 2 Materials and Methods

The specimens were collected during the regular macrobenthic samplings for two years (August 2013 to July 2015) across the eleven intertidal regions of different habitats (sandy, sandy-mud and seagrass beds) of the South Andaman coast (Fig.1). Most of the habitats were sand dominated (Table 1). The Polychaete samples were separated using test sieves of mesh size 0.5mm, fixed initially with 5% formalin solution and then later on transferred to 70% ethanol for long term preservation and further taxonomic studies.

The classification used in this study is based on the taxonomic revision accomplished by Böggemann (2002). The Morphological characters and counts were first observed under a stereomicroscope (Nikon SMZ 1500). The Parapodia, Papillae were dissected and mounted on temporary slides using glycerol. For each specimen 10 individuals were taken and dissected various parts to be observed under microscope. Line drawings were made using stereomicroscope and Olympus compound microscope BX41 and CX31. The examined materials are deposited in the National Zoological collections at the Zoological Survey of India regional center Port Blair, National Repository center, Govt. of India.



**Fig. 1** Map showing the sampling site in South Andaman Coast.

**Table 1** Details of sampling location and sediments properties.

	Station	Code	Lat	Long	Sand Fraction% (mean)	Grain Size (mean)
1	Havelock Island	HV	12° 01'14"N	093° 00'30"E	90.53	123.17
2	Neil Island	NL	11° 50'33"N	093° 02'09"E	93.48	195.25
3	Junglighat	JG	11°39'40"N	092°43'42"E	84.17	113.5
4	Phoenix Bay	PB	11°40'23"N	092°43'55"E	77.3	128.78
5	Chatham	CH	11°41'08"N	092°43'23"E	87.54	160.13
6	Aberdeen Bay	AB	11°40'18"N	092°44'54"E	95.6	150.60
7	Carbyn'S Cove	CC	11°38'35"N	092°44'50"E	95.4	141.33
8	Burmanullah	BN	11°34'43"N	092°44'21"E	91.1	238.95
9	Chidiyatapu	CT	11°29'55"N	092°42'50"E	93.97	156.98
10	Wandoor	WD	11°22'06"N	092°40'33"E	96.4	154.88
11	Hut Bay	HB	10°30'41"N	092°30'16"E	94.85	271.8

### 3 Systematics

#### 3.1 Key to the species of *Glycera* from South Andaman Coast

1. Proboscidal papillae without terminal finger nail structure.....2
  - Proboscidal papillae with terminal finger nail structure ..... 7
2. In mid body parapodia with one postchaetal lobe ..... 3
  - In mid body parapodia with two postchaetal lobes..... 5
3. Prechaetal lobes are of the same length.....4
  - Notopodial prechaetal lobe is distinctly shorter than neuropodial prechaetal lobes, conical proboscidal papillae with undulating ridges .....*Glycera lapidum* Quatrefages 1866.
4. Digitiform proboscidal papillae without ridges, aileron with deeply incised base, digitiform branchia present..... *Glycera sphyrabrancha* Schmarda 1861.\*  
(*Glycera longipinnis* Grube 1878)
  - Conical proboscidal papillae with transverse ridges, aileron with the slightly arched base, branchia absent.....*Glycera oxycephala* Ehlers 1887.
5. Aileron with deeply incised base, short rounded postchaetal lobes, branchia absent, digitiform papillae.....6
  - Aileron with the presence of interrampal plate, mid body parapodia with triangular notopodial postchaetal lobe and rounded postchaetal lobe, digitiform retractile branchia present. Conical papillae with three ridges, Aileron with triangular base ..... *Glycera nicobarica* Grube 1868.
6. Digitiform proboscidal papillae with 8-17 transverse ridges.....*Glycera brevicirris* Grube 1870.
  - Digitiform proboscidal papillae with longitudinal ridges.....*Glycera tessellata* Grube 1863.
7. Mid body parapodia with triangular postchaetal lobes of the same length, 1-5 digitiform branchia.....*Glycera cinnamomea* Grube 1874.\*  
(*Glycera prashadi* Fauvel 1932)
  - Mid body parapodia with triangular notopodial postchaetal lobes, rounded neuropodial postchaetal lobe.....8
8. Neuropodial postchaetal lobes rounded in mid body parapodia and posterior parapodia. Branchia situated termino-dorsally, aileron with triangular base..... 9
  - Neuropodial postchaetal lobes are rounded in mid body, slender in the posterior parapodia as long as notopodial postchaetal lobe, simple digitiform branchia situated

- mediodorsally.....*Glycera posterobranchia* Hoagland 1920.
9. Proboscidal papillae with long stalk.....*Glycera alba* O.F.Muller 1776.
- Proboscidal papillae with medium stalk.....*Glycera africana* Arwidsson 1899.
- Proboscidal papillae with short stalk.....*Glycera tridactyla* Schmarda 1861.

\* Species not recorded during present study, however been recorded from earlier studies.

### 3.2 *Glycera lapidum* Quatrefages 1866. Fig. 2, a-g.

*Glycera lapidum* Quatrefages 1866:187-188; Böggemann 2002:37-40, Figs. 19-21.

**Diagnosis:** Proboscidal papillae digitiform with undulating ridges. One postchaetal lobe, neuropodial prechaetal lobe longer than the notopodial prechaetal lobe. Aileron with a pointed triangular base with a slight dent. Dorsal cirri inserted away from the parapodia base. Branchia is absent.

**Description:** Registration no ZSI/ANRC-16990. Complete specimen measuring 14mm with 39 segments. Body rings in anterior regions are bi-annulated, mid-body segments are more or less tri-annulated. Four antennae present in the tip of the prostomium. Elongated conical prostomium which is longer than width consisting of 10-12 indistinct rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae, comprises of two distinct types. Most papillae are digitiform shape of various lengths with undulating ridges. The rest of the papillae are conical shape which resemble oval shape without any ridges. Aileron with a pointed triangular base with a slight dent. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal lobes and a single postchaetal lobe. The notopodial prechaetal lobe remains shorter than the prechaetal lobe of the neuropodia throughout the body. In the anterior and mid-body segments, the neuropodial prechaetal lobe is present with abroad base in relation to the notopodial prechaetal lobe. In the last segments, the prechaetal lobe of noto and neuropodia is seen in the digitiform shape. The postchaetal lobe is short and rounded throughout the body. Dorsal cirrus is conical to oval shape present from 3<sup>rd</sup> segments onwards inserted far away from the parapodia basis. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end, it transforms to digitiform shape. In the last segment, the length of the ventral cirrus is as equal to the neuropodial prechaetal lobe. Simple capillaries in notopodia and compound spinigers are present in neuropodia. Branchia is absent.

**Remarks:** The morphological characters of papillae and parapodia confirms the specimen *G.lapidum*. *G.capitata* and *G.lapidum* are quite similar, which may leads to misidentification. The difference between them is the arrangement of ridges on the digitiform papillae. Rajasekaran and Fernando (2012) recorded *G.capitata* from Andaman and Nicobar region. There is a chance of misidentification of their report, since *G.capitata* is known to occure and recorded from the cold waters only (personal communication M. Böggemann). Their specimens were not deposited in the National Center and hence the validity could not be concluded.

**Distribution:** Mostly in temperate waters, tropics of indo-pacific. Recorded from the Andaman Sea, New record to the Andaman coast.

### 3.3 *Glycera oxycephala* Ehlers, 1887. Fig 3, a-g.

*Glycera oxycephala* Ehlers 1887:121-123, pl. 41, Figs. 7-11; Böggemann 2002: 40-41, Figs. 22-24.

**Diagnosis:** Proboscidal conical and oval papillae with transverse ridges. One postchaetal lobe, both the prechaetal lobes are of equal size. Aileron with the slightly arched base. Dorsal cirri inserted closer to the parapodial base Branchia absent.

**Description:** Registration no ZSI/ANRC-16991. Complete specimen measuring 65mm with 156 segments. Body rings in the anterior region are bi-annulated, mid-body segments are more or less tri-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consists of 20-25 indistinct rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae. Proboscidal papillae comprised of two distinct types. Most abundant papillae conical shape with transverse ridges 11-18. The rest of the papillae are oval shaped papillae with transverse ridges 5-9. Aileron with slightly arched base. First two setigers are uniramous followed by biramous parapodia. Parapodia consist of two prechaetal lobes and a single postchaetal lobe. The notopodial and neuropodial prechaetal lobes are of similar length. The lobes transform from broad base to digitiform from anterior to the posterior segments. The postchaetal lobe is short and rounded throughout the body. Dorsal cirrus is conical to oval shape present from 3<sup>rd</sup> segments onwards, inserted near to the parapodia basis. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end, it transforms to digitiform shape. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end, it transforms to digitiform shape. Simple capillaries in notopodia and compound spinigers are present in neuropodia. Branchia is absent.

**Distribution:** In the temperate and tropic region. New record to Andaman coast.

### 3.4 *Glycera nicobarica* Grube 1868. Fig. 4, a-f.

*Glycera nicobarica* Grube 1868: 24, pl. 3, Figs. 1a–b Böggemann 2002: p 57-58, Figs. 67-69

**Diagnosis:** Proboscidal papillae conical with three transverse ridges. Postchaetal lobes are short, notopodia triangular in shape, neuropodial been round. Aileron with a triangular base. Retractable branchia is present.

**Description:** Registration no ZSI/ANRC-16994. Incomplete specimen measuring 38mm with 104 segments. Body rings in mid-body segments are bi-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consists of 10-11 rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae. Proboscidal papillae comprised of two distinct types. The most abundant papillae are conical shape with three transverse ridges. The rest are oval shape papillae without ridges. Aileron with a triangular base. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal and postchaetal lobes. The two prechaetal lobes are observed to be triangular form with broad base in the anterior and mid-body region to digitiform in the posterior segment. The postchaetal lobes are short, notopodial lobes are triangular in shape whereas neuropodial lobes are rounded. Dorsal cirrus starts from 2<sup>nd</sup> segment, conical to oval shape placed close to the parapodial base. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end it transforms to digitiform shape. Retractable digitiform branchia is present from 19-26<sup>th</sup> segments to the posterior end, distinctly visible in the mid-body segments. Simple capillaries in notopodia and compound spinigers are present in neuropodia.

**Remarks:** Variation is seen in the specimen from Andaman coast regarding the appearance of branchia. In the present study, the branchia arises between 16-24<sup>th</sup> segments. In the study made by Böggemann (2002) the branchia arises between 23-26<sup>th</sup> segment, whereas 24<sup>th</sup> segment from Bioshelf study (Böggemann and Eibye-Jacobsen 2002)

**Distribution:** Indian Ocean, Andaman Sea, Indo-pacific, East and South China Sea, Japan, New record to Andaman coast

### 3.5 *Glycera brevicirris* Grube 1870. Fig. 5, a-g.

*Glycera brevicirris* Grube 1870:61-62; Böggemann 2002: 44-47, Figs. 34-36.

**Diagnosis:** Proboscidal papillae digitiform with 8-17 transverse ridges. Neuropodial prechaetal lobe is slightly longer than the notopodial lobe. Two postchaetal lobes short and rounded. Aileron with the deeply incised base. Branchia is absent.

**Description:** Registration no ZSI/ANRC-16992. Complete specimen measuring 62mm with 142 segments. Body rings in anterior body segments are bi-annulated, mid-body segments are more or less tri-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consists of 10-12 rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae. Proboscidal papillae comprised of two distinct types. The most abundant papillae are digitiform shape with 8-17 transverse ridges. The rest are oval shape papillae with longitudinal ridges. Aileron with the deeply incised base. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal and postchaetal lobes. The two prechaetal lobe are observed to be of triangular form with a broad base in the anterior and mid-body region to digitiform in the posterior segments. Both the prechaetal lobe are subequal, neuropodial lobe been slightly longer than the notopodial lobe. The postchaetal lobes are short and rounded throughout the body segments. Conical to oval dorsal cirrus appears from the 3<sup>rd</sup> segment and placed slightly away from the parapodial basis. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end it transforms to digitiform shape. Simple capillaries in notopodia and compound spinigers are present in neuropodia. Branchia is absent.

**Distribution:** West and East Atlantic, Gulf of Mexico, Caribbean Sea, Red Sea, Indian Ocean, Andaman Sea, Indo-Pacific, Central Pacific Basin, East Pacific coast, New record to Andaman coast.

### 3.6 *Glycera tessellata* Grube 1863. Fig. 6, a-g.

*Glycera tessellata* Grube 1863: 41-42, pl. 4, Figs 4, 4a; Böggemann 2002:47-48, Figs 37-39.

**Diagnosis:** Proboscidal papillae digitiform with median longitudinal ridges. Neuropodial prechaetal lobe is slightly longer than the notopodial lobe. Two postchaetal lobes short and rounded. Aileron with the deeply incised base. Branchia is absent.

**Description:** Registration no ZSI/ANRC-16993. Incomplete specimen measuring 56mm with 111 segments. Body rings in anterior segments are bi-annulated, mid-body segments are more or less tri-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consists of 8-9 rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae. Proboscidal papillae comprised of two distinct types. Most abundant papillae digitiform shape with the straight longitudinal median ridge. The rest are conical shape papillae without any distinct ridges. Aileron with the deeply incised base. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal and postchaetal lobe. The two prechaetal lobe observed to be with a triangular form with a broad base in the anterior and mid-body region to digitiform in the posterior segments. Both the prechaetal lobes are subequal, neuropodial lobes been slightly longer than the notopodial lobe. The postchaetal lobes are short and rounded throughout the body segments. Conical to oval dorsal cirrus started from the 3<sup>rd</sup> segment and placed far away from the parapodial basis. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end it transforms to digitiform shape. Simple capillaries in notopodia and compound spinigers are present in neuropodia. Branchia is absent.

**Distribution:** Northwestern and Northeastern Atlantic, Gulf of Mexico, Caribbean Sea, Mediterranean Sea, Red Sea, South coasts of Africa, Indo-Pacific, Northwestern Pacific, Andaman Sea and New record to Andaman coast.

### 3.7 *Glycera posterobranchia* Hoagland 1920. Fig. 7, a-h.

*Glycera posterobranchia* Hoagland 1920: 620, pl.51, figs. 3-8. Böggemann 2002: p 70-71, Figs. 103-105.

**Diagnosis:** Proboscidal papillae with terminal finger nail structure with longitudinal ridges on its stalk. Two postchaetal lobes short and rounded. Aileron with the pointed triangular base. Branchia is present and placed at medio-dorsally on the parapodia.

**Description:** Registration no ZSI/ANRC-16995. Complete specimen measuring 35mm with 104 segments. Body rings in mid-body segments are bi-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consisting of 10-11 rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae. The proboscis with three types of papillae. The most abundant papillae are papillae with terminal fingernail structure with medium stalk with longitudinal ridges on the stalk. The rest of the papillae are short conical shaped papillae with longitudinal ridges and oval shaped papillae without any ridges. Aileron with the pointed triangular base. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal and postchaetal lobe. The two prechaetal lobes observed to be with a triangular form with abroad base in the anterior and mid-body region to digitiform in the posterior segments. The postchaetal lobes are short, notopodial lobes are triangular in shape whereas neuropodial lobes are rounded. In posterior segment, both the postchaetal lobes are slender and are of equal length. Dorsal cirrus starts from 3<sup>rd</sup> segment conical to oval shape placed close to parapodial base. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end it transforms to digitiform shape. Non-retractile branchia is present between 16-24<sup>th</sup> segment medio-dorsally on the parapodia to the posterior end. Simple capillaries in notopodia and compound spinigers are present in neuropodia.

**Distribution:** The South China Sea, Bay of Bengal, Vietnam, Andaman Sea, Indian Ocean, and New record to Andaman coast.

### 3.8 *Glycera alba* O.F.Müller 1776. Fig. 8, a-h.

*Nereis alba* O.F. Müller 1776: 217. *Glycera alba*. –? Fauvel 1932: 126;? 1939: 341;? 1953: 292, fig. 149i-m. Böggemann 2002: p 72-73, Figs. 109-111.

**Diagnosis:** Proboscidal terminal finger nail structure papillae with longitudinal ridges and long stalk. Aileron with the pointed triangular base. Notopodial postchaetal lobe is triangular and longer to the rounded neuropodial lobe. Branchia is present and placed at termino-dorsally on the parapodia.

**Description:** Registration no ZSI/ANRC-16996. Complete specimen measuring 38mm with 95 segments. Body rings in the mid-body segments are bi-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consisting of 9-11 rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae. The proboscis with three types of papillae. The most abundant papillae, terminal fingernail structure with long stalk and longitudinal ridges on the nail. The rest are digitiform shape papillae with longitudinal ridges and oval shape papillae without any ridges. Aileron with the pointed triangular base. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal lobes of the same length and two postchaetal lobes. The two prechaetal lobe observed to be triangular shape with abroad base in the anterior and mid-body region to digitiform in the posterior segments. The postchaetal lobes are short, notopodial lobes are triangular in shape and longer than the rounded neuropodial lobes. Dorsal cirrus starts from 3<sup>rd</sup> segment conical to oval shape placed close to parapodial base. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end it transforms to digitiform shape. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end it transforms to digitiform shape. Non-retractile digitiform branchia is present between 18-23<sup>rd</sup> segment termino-dorsally on the parapodia to the posterior end. Simple capillaries in notopodia and compound spinigers are present in neuropodia.



**Distribution:** Norwegian Sea, North Sea, Atlantic coasts of Europe, Mediterranean Sea, Black Sea, Sea around Madagascar, Bay of Bengal, Northwestern Pacific coasts, East and South China Sea. Andaman Sea and New record to Andaman coast.

### 3.9 *Glycera africana* Arwidsson 1899. Fig. 9. a-h.

*Glycera Africana* Arwidsson 1899: 21; pl. 1, figs. 10-12.

**Diagnosis:** Proboscidal terminal finger nail structure papillae with longitudinal ridges and medium length stalk. Aileron with the pointed triangular base. Notopodial postchaetal lobe is triangular and longer to the rounded neuropodial lobe. Branchia is present and placed at termino-dorsally on the parapodia.

**Description:** Registration no ZSI/ANRC-16997. Complete specimen measuring 18mm with 87 segments. Body rings in mid-body segments are bi-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consisting of 19-24 rings. Proboscis with four curved chitinous jaws on its anterior margin which is followed by soft papillae. Proboscis with three types of papillae. The most abundant papillae terminal fingernail structure with medium length stalk and longitudinal ridges on the nail. The rest of papillae are digitiform shape with longitudinal ridges and oval shape papillae without any ridges. Aileron with the pointed triangular base. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal lobes of the same length and two postchaetal lobes. The two prechaetal lobe observed to be triangular shape with abroad base in the anterior and mid-body region to digitiform in the posterior segments. The postchaetal lobes are short, notopodial lobes are triangular in shape and longer than the rounded neuropodial lobes. Dorsal cirrus starts from 3<sup>rd</sup> segment conical to oval shape placed close to parapodial base. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end, it transforms to digitiform shape. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end it transforms to digitiform shape. Non-retractile digitiform branchia is present between 16-22<sup>nd</sup> segment termino-dorsally on the parapodia to the posterior end. Simple capillaries in notopodia and compound spinigers are present in neuropodia.

**Distribution:** West and East coasts of Africa, Bay of Bengal, Andaman Sea and New record to Andaman coast.

### 3.10 *Glycera tridactyla* Schmarda 1861. Fig. 10, a-h.

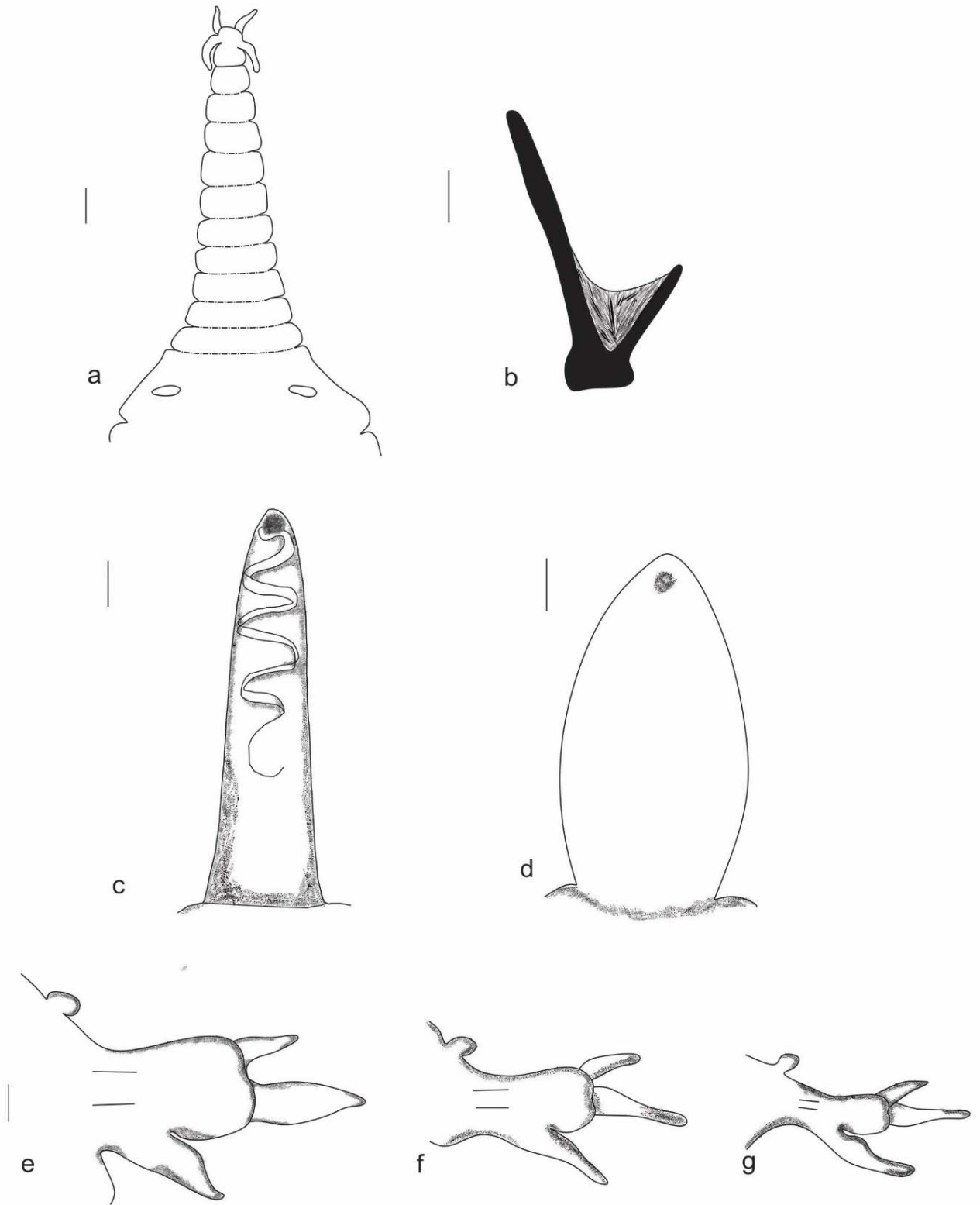
*Glycera tridactyla* Schmarda 1861: 97; pl. 30, fig. 238; text Figs a-b, k; Böggemann 2002: p 75-77, Figs. 118-120.

**Diagnosis:** Proboscidal terminal finger nail structure papillae with longitudinal ridges and short length stalk. Aileron with the pointed triangular base. Notopodial postchaetal lobe is triangular and longer to the rounded neuropodial lobe. Branchia is present and placed at termino-dorsally on the parapodia.

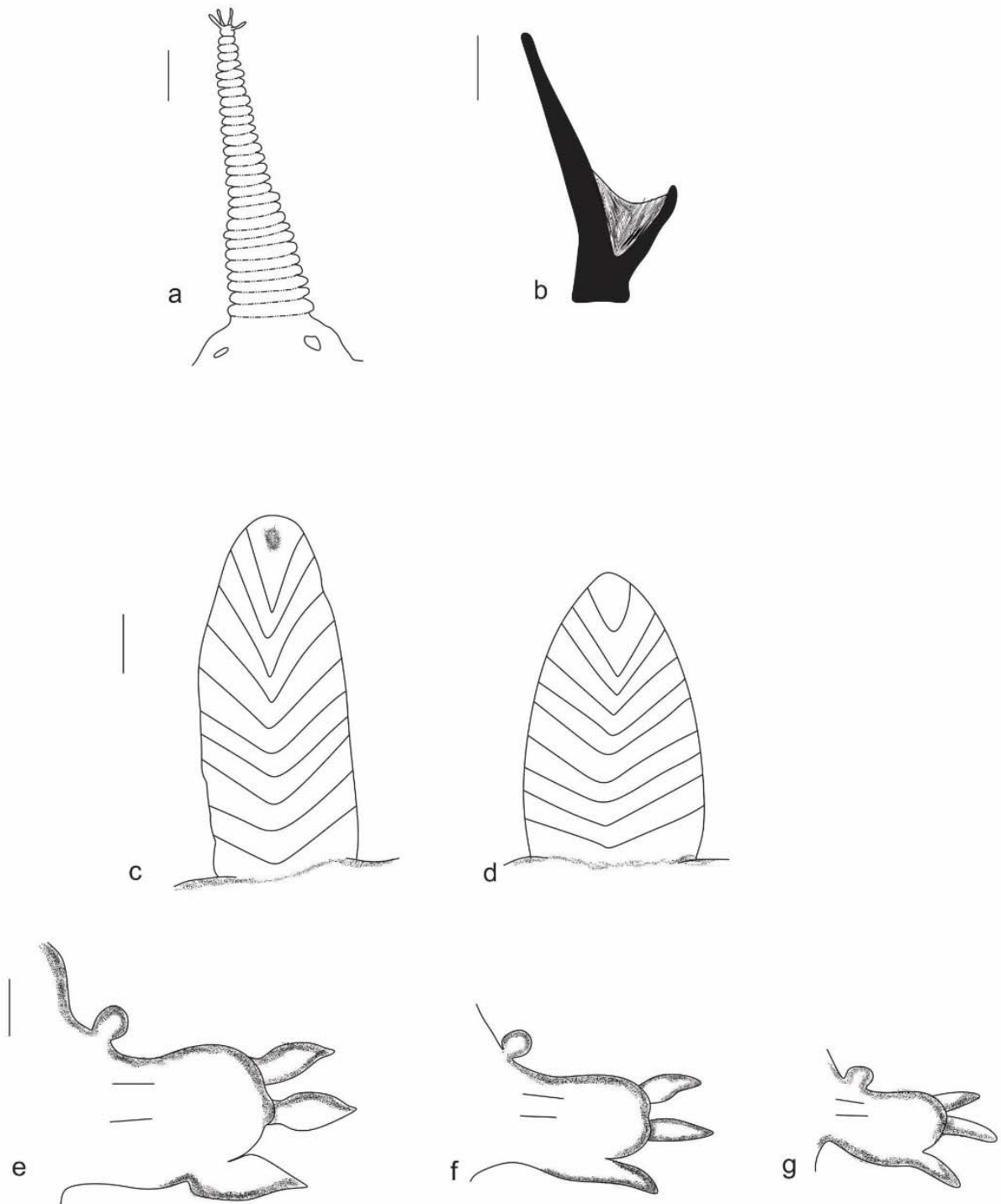
**Description:** Registration no ZSI/ANRC-16998. Complete specimen measuring 36mm with 99 segments. Body rings in mid-body segments are bi-annulated. Four antennae are present in the tip of the prostomium. Elongated conical prostomium which is longer than width consisting of 11-14 rings. Proboscis with four curve chitinous jaw on its anterior margin which is followed by soft papillae. The proboscis with three types of papillae. The most abundant papillae, terminal fingernail structure with short length stalk and longitudinal ridges on the nail. The rest of the papillae are digitiform shape with longitudinal ridges and oval shape without any ridges. The Aileron with the pointed triangular base. First two setigers are uniramous followed by biramous parapodia. Parapodia consists of two prechaetal lobes of the same length and two postchaetal lobes. The two prechaetal lobe observed to be with a triangular form with abroad base in the anterior and mid-body region to digitiform in the posterior segments. The postchaetal lobes are short, notopodial lobes are triangular in shape and longer than the rounded neuropodial lobes. Dorsal cirrus starts from 3<sup>rd</sup> segment conical to oval shape placed close to parapodial base. The ventral cirrus is broadly triangular in the anterior and mid-body

regions, but in the posterior end it transforms to digitiform shape. The ventral cirrus is broadly triangular in the anterior and mid-body regions, but in the posterior end, it transforms to digitiform shape. Non-retractile digitiform branchia is present between 17-22<sup>nd</sup> segment, termino-dorsally on the parapodia to the posterior end. Simple capillaries in notopodia and compound spinigers are present in neuropodia.

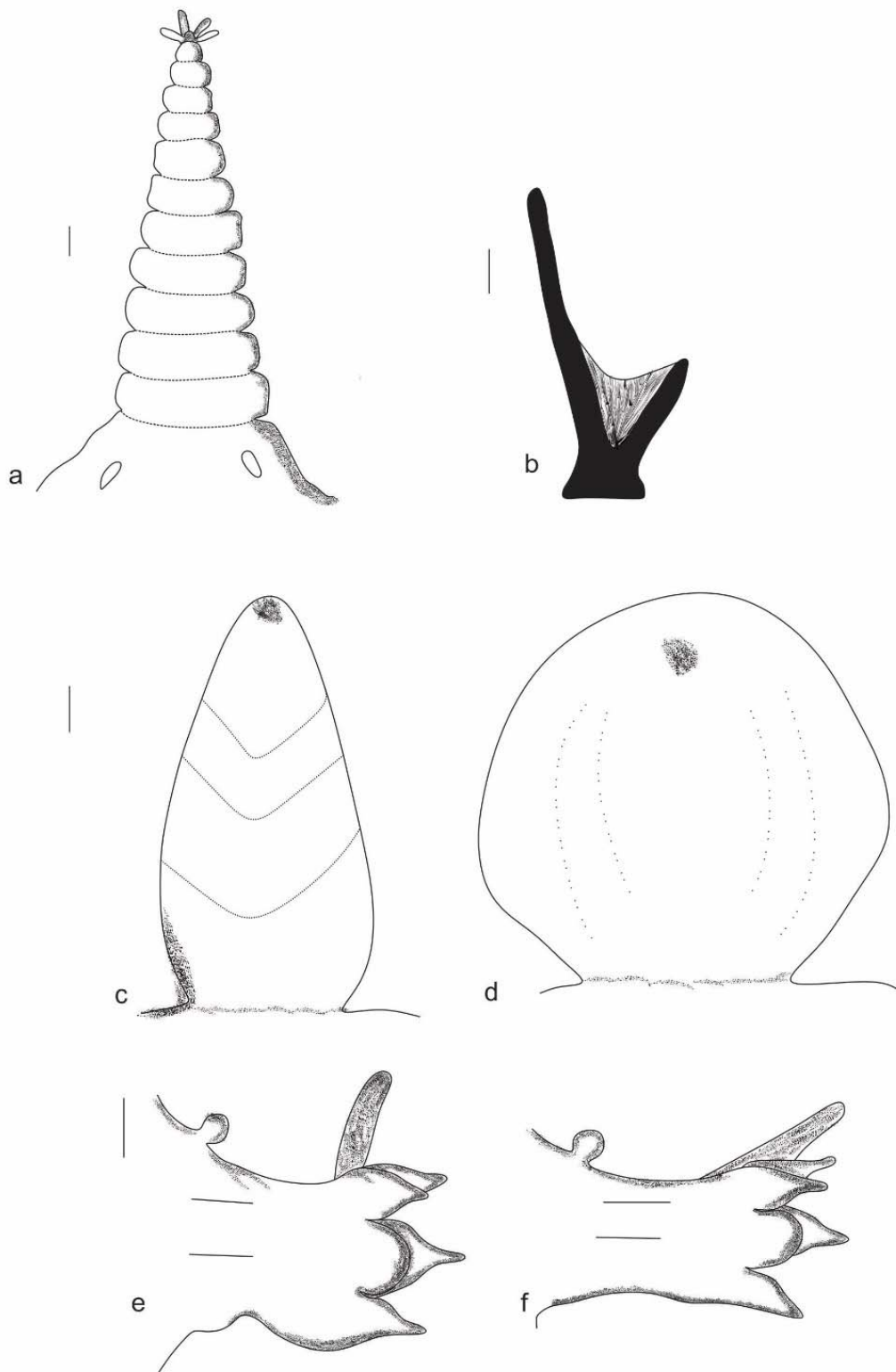
**Distribution:** West coasts of Europe, Mediterranean Sea, Black Sea, Coasts of South Africa, Red Sea, Arabian Sea, Bay of Bengal, Coasts of Japan, East and South China Sea, Coasts of New Guinea, East coast of Australia, Andaman Sea, and New record to Andaman coast.



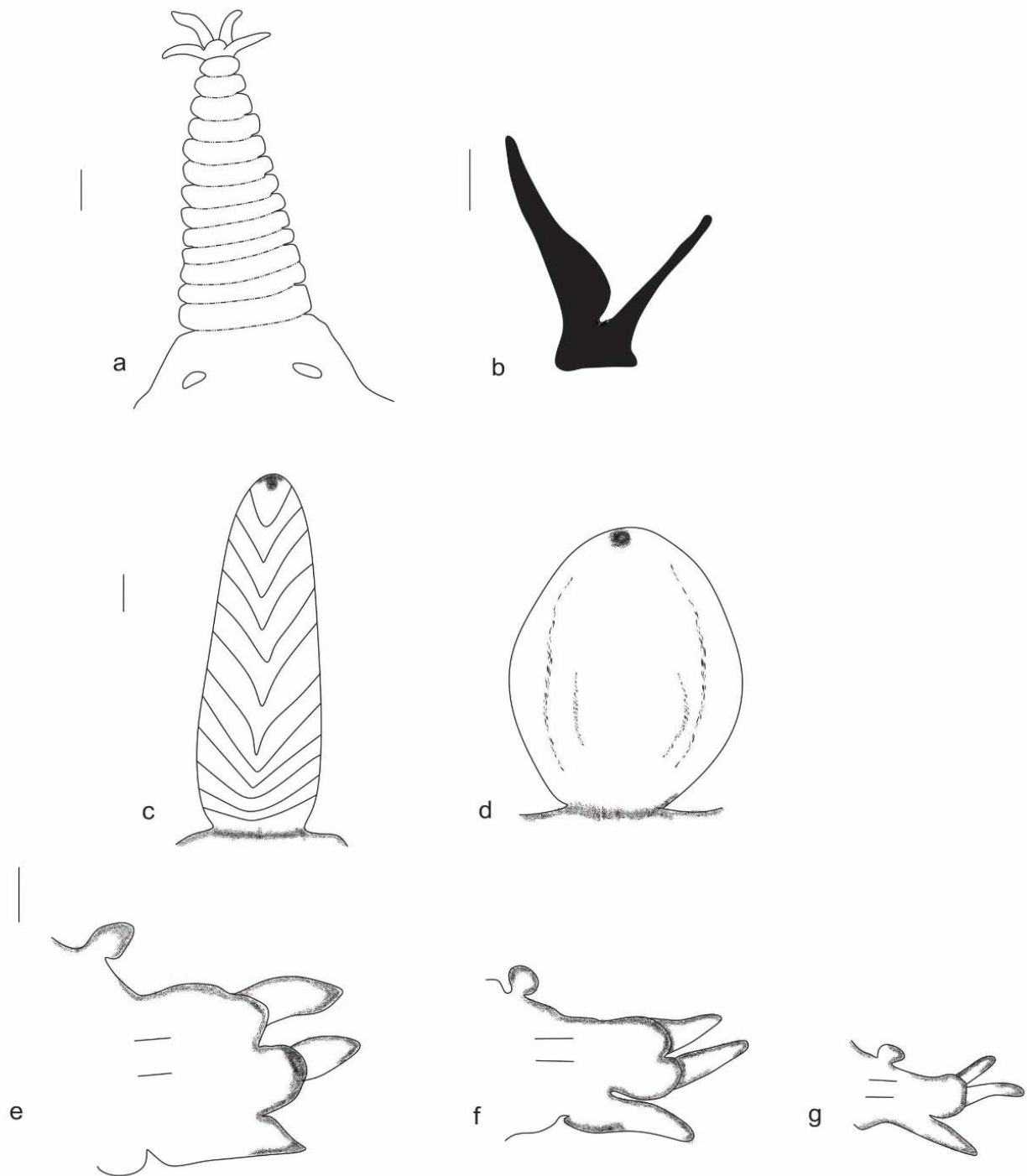
**Fig. 2** *Glycera lapidum* Quatrefages 1866. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II. e-g) mid to posterior parapodia. Scale a,b,e-g= 0.1mm, c,d=0.01mm.



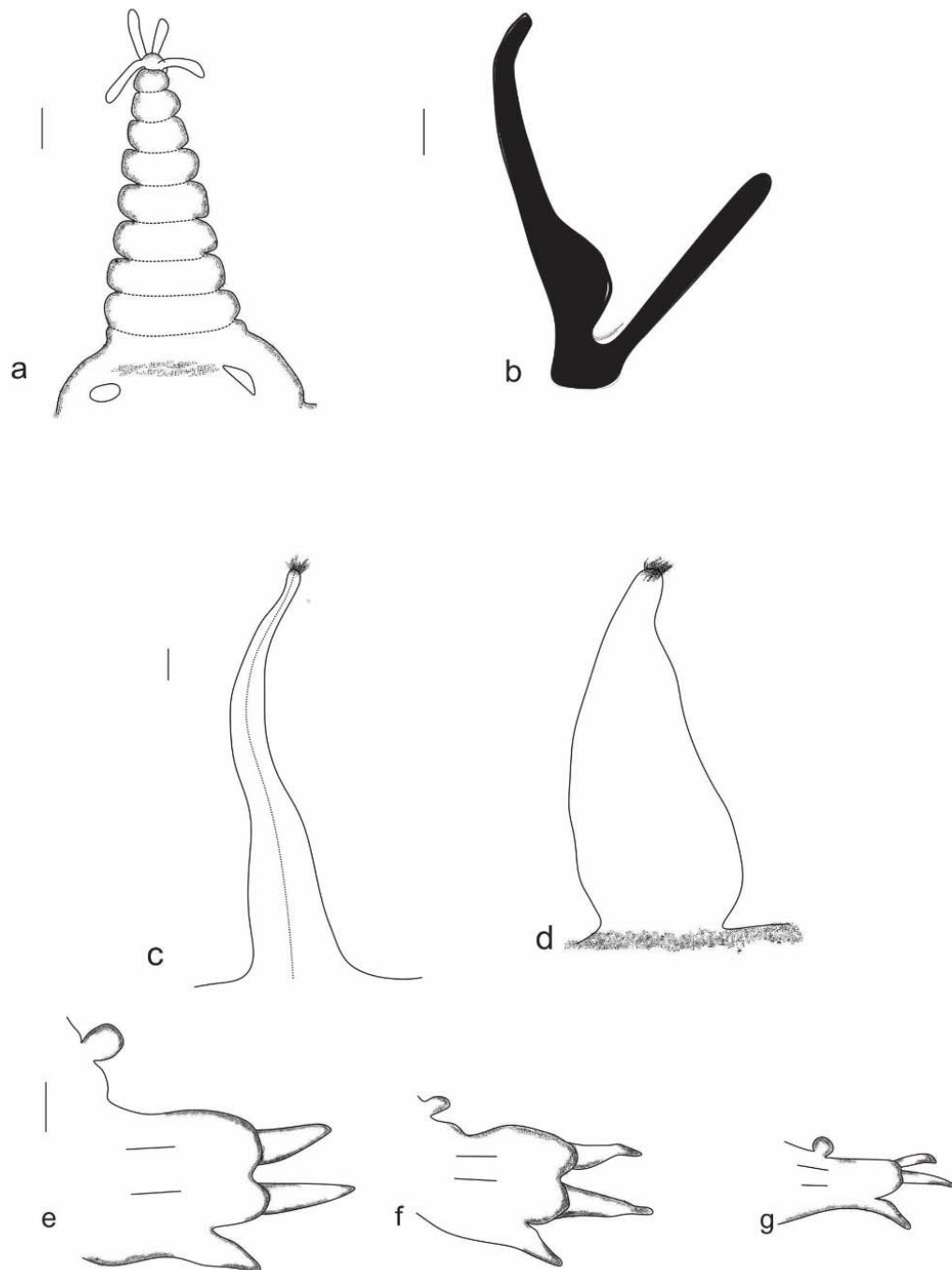
**Fig. 3** *Glycera oxycephala* Ehlers 1887. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II. e-g) mid to posterior parapodia. Scale a,b,e-g= 0.1mm, c,d =0.01mm.



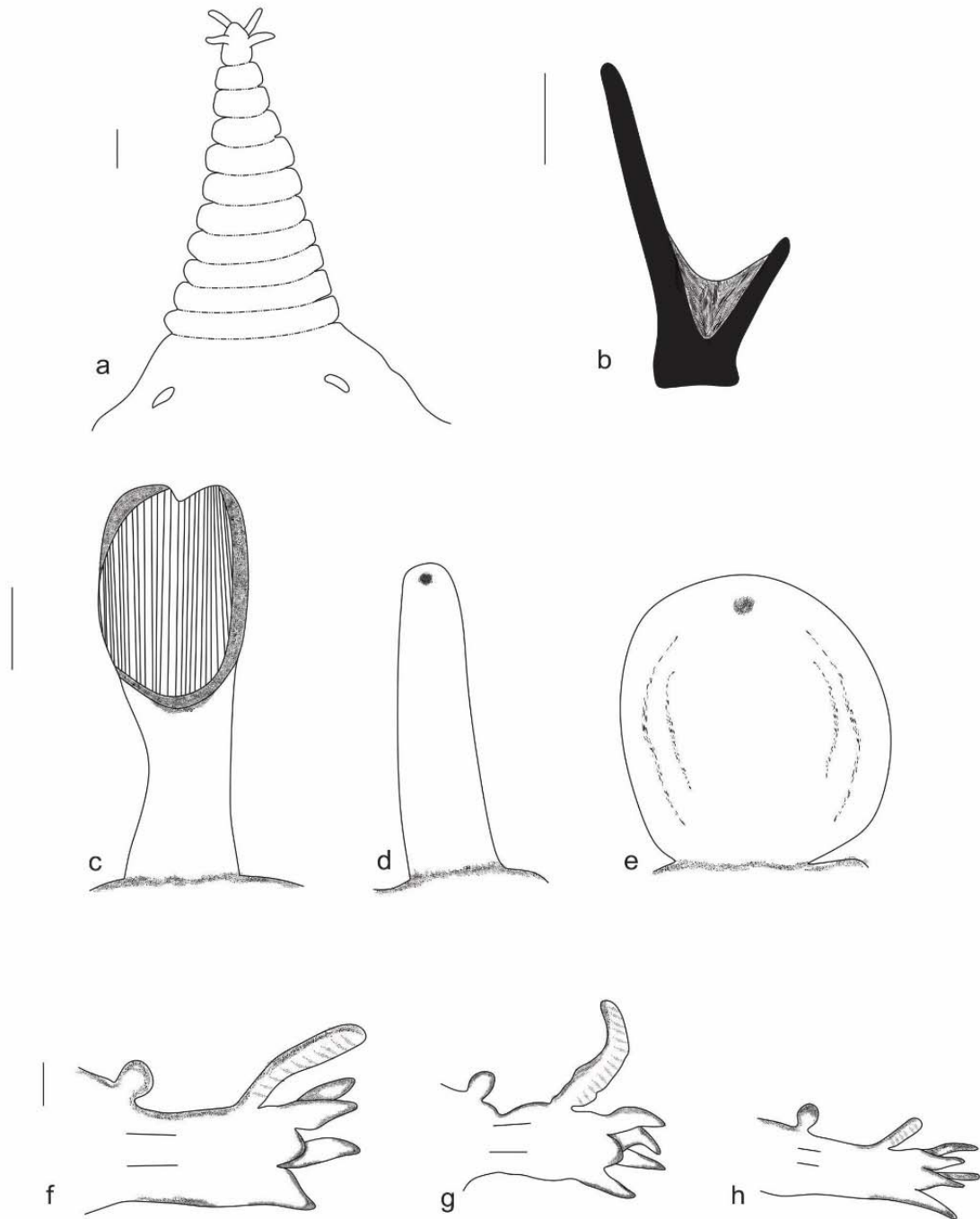
**Fig. 4** *Glycera nicobarica* Grube 1868. . a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II .e-f) mid to near posterior end parapodia. Scale a,b,e-f= 0.1mm, c,d =0.01mm.



**Fig. 5** *Glycera brevicirris* Grube 1870. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II. e-g) mid to posterior parapodia. Scale a,b,e-g= 0.1mm, c,d =0.01mm.

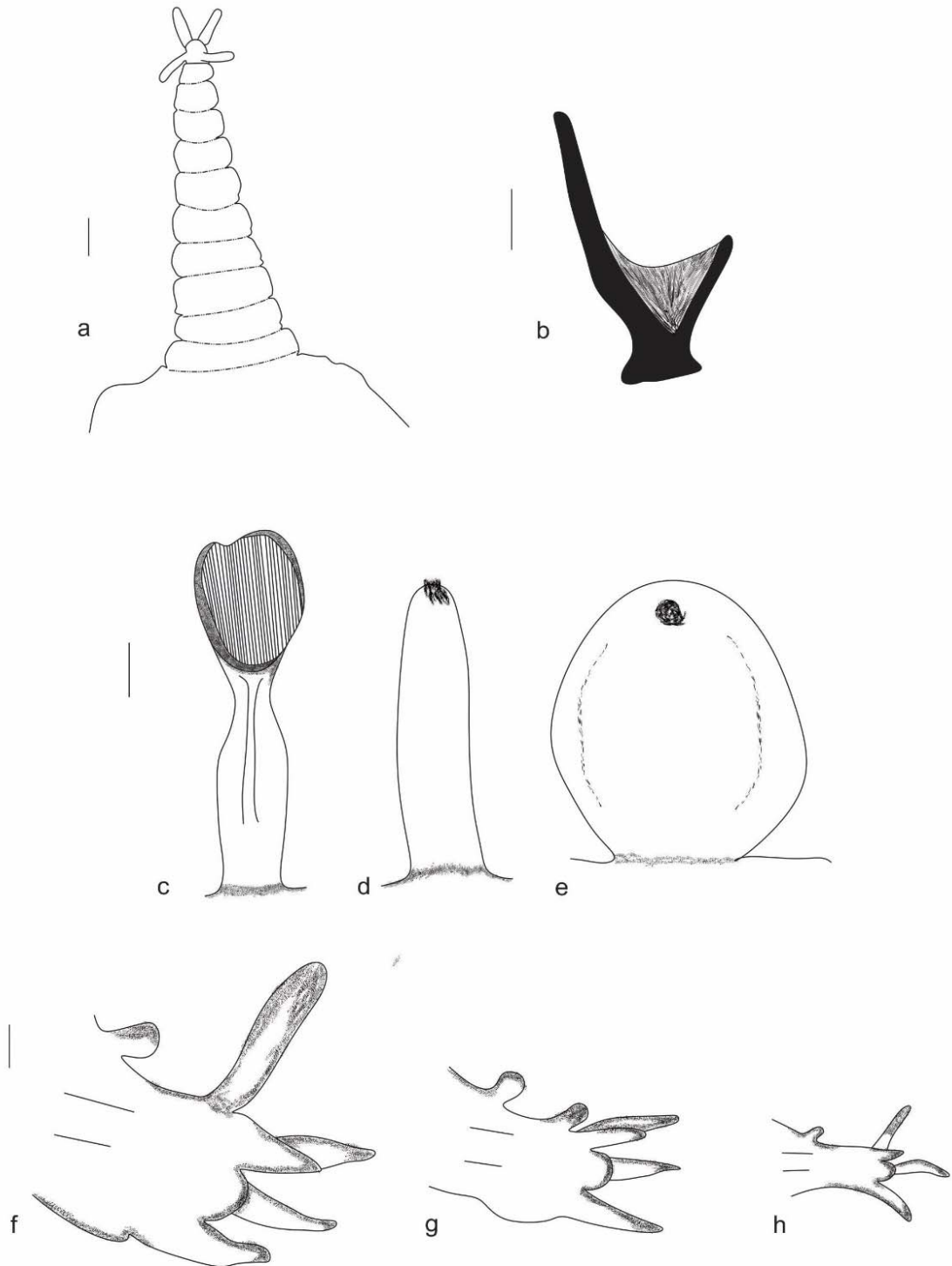


**Fig. 6** *Glycera tessellata* Grube 1863. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II. e-g) mid to posterior parapodia. Scale a,b,e-g= 0.1mm, c,d =0.01mm.

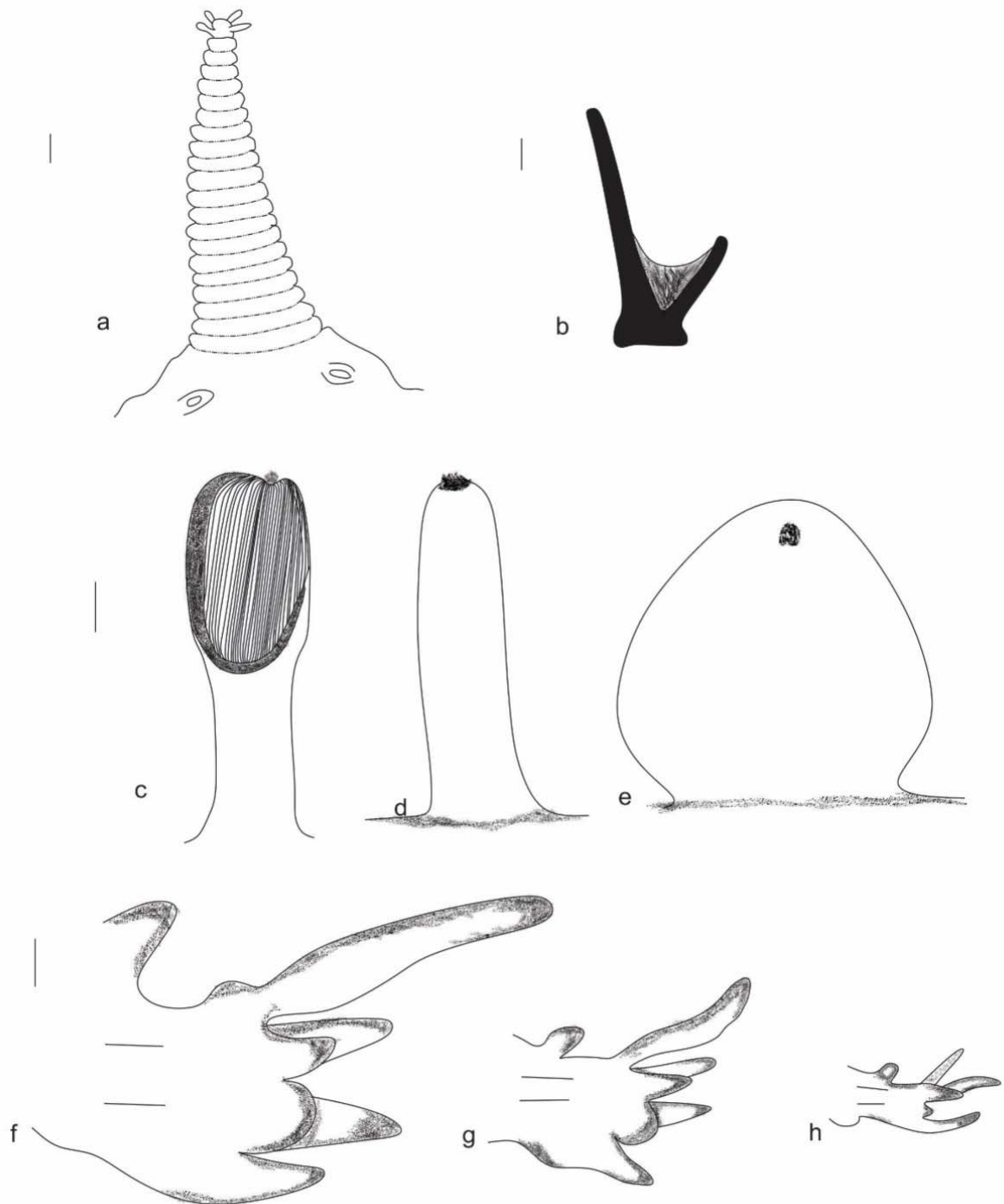


**Fig. 7** *Glycera posterobranchia* Hoagland 1920. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II. e) Proboscidal Papillae type III f-h) mid to posterior parapodia. Scale a,b,f-h= 0.1mm, c-e =0.01mm.

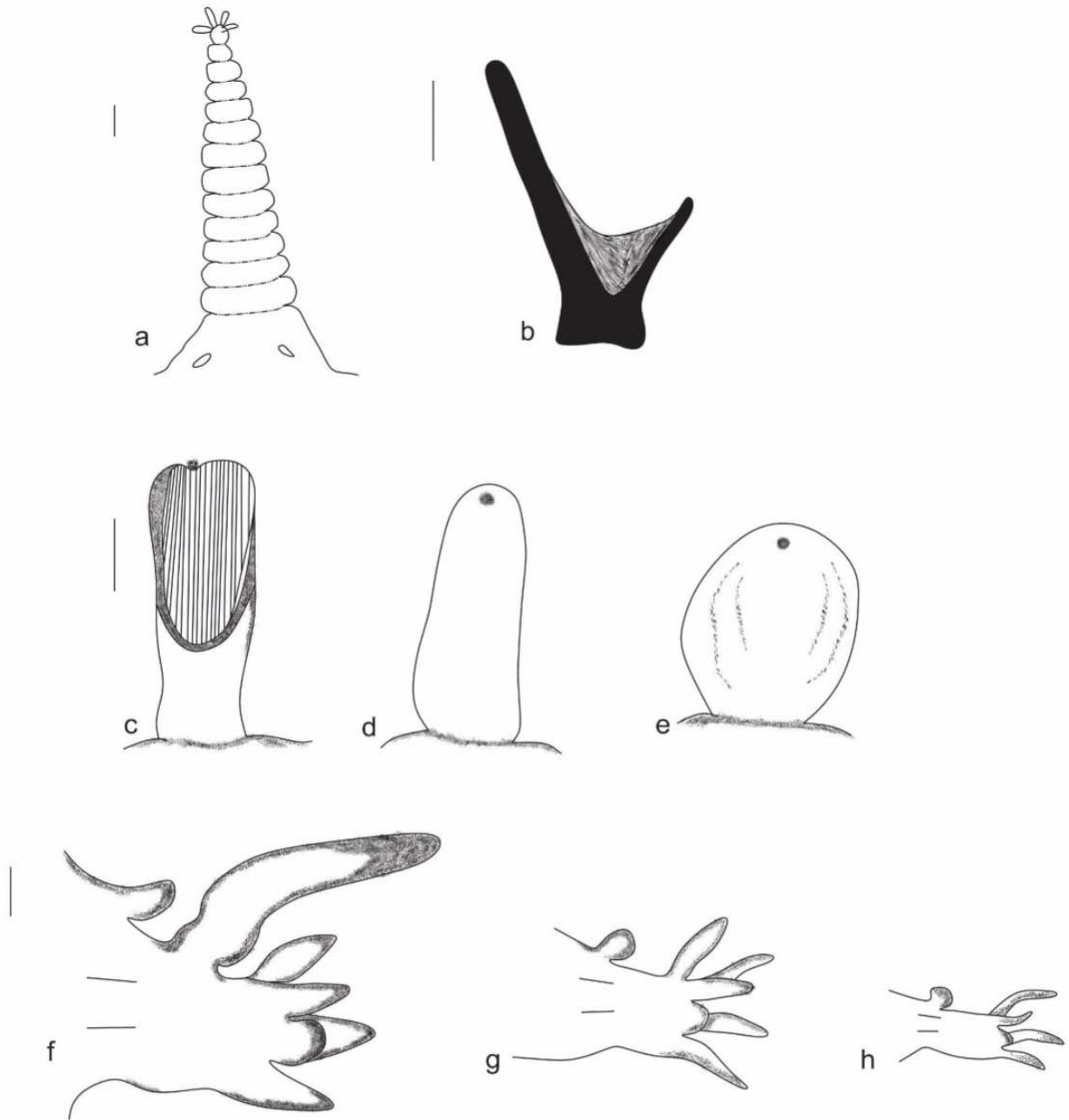




**Fig. 8** *Glycera alba* O.F.Muller 1776. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II . e) Proboscidal Papillae type III f-h) mid to posterior parapodia. Scale a,b,f-h= 0.1mm, c-e=0.01mm.



**Fig. 9** *Glycera africana* Arwidsson 1899. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II. e) Proboscidal Papillae type III f-h) mid to posterior parapodia. Scale a,b,f-h= 0.1mm, c-e =0.01mm.



**Fig. 10** *Glycera tridactyla* Schmarda 1861. a) Prostomium. b) Aileron. c) Proboscidal Papillae type I. d) Proboscidal Papillae type II. e) Proboscidal Papillae type III f-h) mid to posterior parapodia. Scale a,b,f-h= 0.1mm, c-e =0.01mm.

#### 4 Discussion

The present study supports the statement that, the Andaman and Nicobar Islands are highly diverse and understudied. Most of the researchers worked from this coast, have followed the taxonomic literature of adjacent waters (Day, 1967a, b, 1973; Fauvel, 1932, 1939, 1953; Hartman, 1974; Southern, 1921). The taxonomic literature for the Andaman Sea is few. Thai-Danish BIOSHELF project undertaken by Phuket Marine Biological Centre provided a useful taxonomic information and established remarkable contribution for the Andaman Sea. The records of Glyceridae and Goniadidae by Böggemann and Jacobsen (2002) is a earmark study which is the first comprehensive taxonomic work of its own kind from the Andaman Sea and further comprehended our understanding of polychaete species distribution and diversity in the region. In 1953 Fauvel documented *G.rouxii* Audouin and Milne-Edwards 1883 and *G.cirrata* Grube 1869 from the Andaman Islands. After taxonomic revision, it was clear that the resemblance of *G.rouxii* is quiet similar to that of *G.nicobarica* and *G.cirrata* to *G.cinnamomea* (see Böggemann and Eibye-Jacobsen, 2002). This study supports that the similar *Glycera* sps. are distributed along the Andaman coast. Most of the species documented in the present study are already documented from the Thailand coast (Böggemann and Eibye-Jacobsen, 2002).

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