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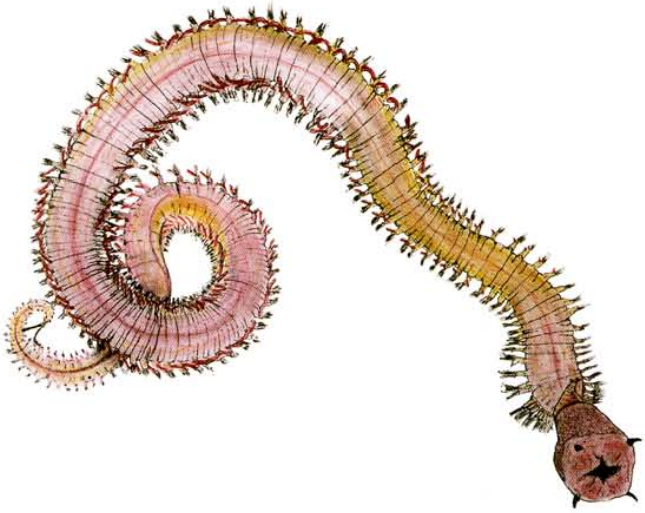

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Revision of the Glyceridae GRUBE 1850 (Annelida: Polychaeta)

With 143 figures and 2 tables

Markus BÖGGEMANN

Abstract

This paper comprises the first revision of all worldwide described Glyceridae. Under the application of light and scanning electron microscopy most of the 172 species and subspecies of the glycerids are examined by their type material. Three of these species (†*Glycera baltica* (EISENACK 1939), †*G. glaucopsammensis* CHARLETTA & BOYER 1974, †*G. pilicae* SZANIAWSKI 1974) represent fossil taxa and are therefore not further investigated. The descriptions and drawings of three other taxa (*Lumbricus capitatus* O. FABRICIUS 1780, *Nereis filigera* BLAINVILLE 1825, *Nereis* (*Nephtys*) *hirsuta* DALYELL 1853), which have been referred to as glycerids, are clearly shown to belong to other families (Capitellidae, Cirratulidae, Nephtyidae). *Glycera viridescens* STIMPSON 1854 seems to be a goniadid, whereas the taxon *Pseudolacydonia caeca* RULLIER 1964 is a synonym for *Glycerella magellanica* (MCINTOSH 1885). Altogether, only 42 species (36 *Glycera*, 1 *Glycerella* and 5 *Hemipodia*) of the 166 recent taxa are considered to be valid species, the others being synonyms or nomina dubia and nomina nuda.

More than 4000 specimens from all over the world were studied and measured, and the 42 valid species are described and illustrated in detail. A list of all taxa together with their synonyms and an identification key for all Glyceridae known to this date are also presented. Addionally all available biological and ecological data from the literature are listed.

The results of the cladistic analysis support a sister group relationship between Goniadidae and Glyceridae. Both taxa are monophyletic as well as the three genera *Glycera*, *Glycerella* and *Hemipodia* within the glycerids.

Keywords: Annelida, Polychaeta, Glyceridae, taxonomy, revision, cladistic analysis.

Introduction

General characteristics

The Glyceridae are slender, cylindrical polychaetes that can reach considerable sizes (probably up to 1 m long). They are widely distributed endopsammal benthic organisms and occur from intertidal to abyssal depths. The body is elongated, tapering at both ends and consists of numerous bi- or triannulate segments (figs. 5, 6). Glycerids are easily recognized by their long, muscular eversible proboscis and the pointed, annulated prostomium (fig. 5). The anteriormost annulus of the prostomium bears four appendages and the posteriormost annulus one pair of nuchal organs; eyes are not present. The characteristic reddish colour (fig. 6a-b), and the four dark jaws with ailerons which are situated terminally on the proboscis (figs. 1, 5), separate the glycerids from the closely related goniadids with their iridescent integument and ring of macro- and micrognaths.

Taxonomic history

SAVIGNY (1822, 1826) placed *Glycera* in the "Néréides Glycériennes", which also included the genera *Aricia* (= *Orbinia*), *Ophelia*, *Hesione*, *Myriana* (= Phyllodocidae) and *Phyllodoce*, because he was of the opinion that *Glycera unicornis* has no jaws. On the basis of the same

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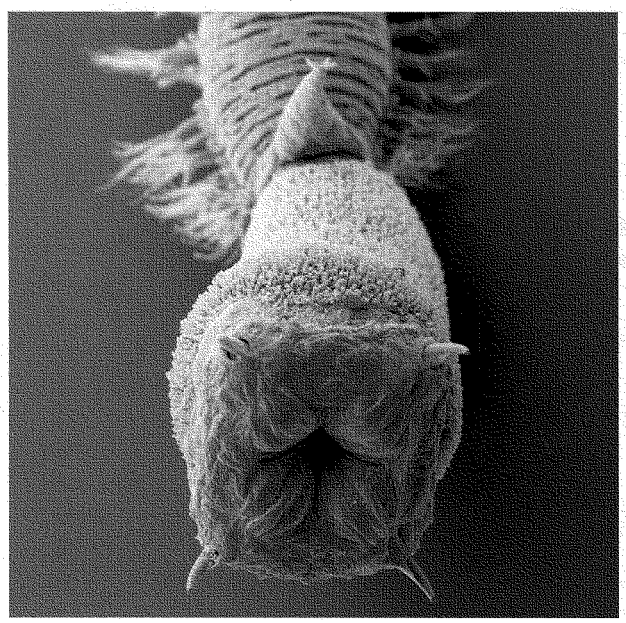

Fig. 1: *Glycera alba* with everted proboscis.

mistake BLAINVILLE (1825) set *Glycera* and *Proboscidea* LESUEUR in the "Néréides Proboscidées ou non dentées". AUDOUIN & MILNE EDWARDS (1833) put *Glycera* together with *Goniada* and *Nephtys* in the "Néréidiens non tentaculés". ÖRSTED (1843b) followed this scheme, but he created the "Division Glycereæ" for these three genera. The family Glyceridae was formally established by GRUBE (1850, 1851) as Glycerea including the two genera *Glycera* and *Goniada*. KINBERG (1865) pointed out the distinguishing characters between glycerids and goniadids and established the separate family Goniadidae (as Goniadea). The independence of these two families was controversial for a long time (EHLERS 1868, FAUVEL 1923), until HARTMAN (1950) described their clear differences. Nevertheless, some subsequent authors (e.g. DAY 1967, RULLIER 1972) chose to align with FAUVEL (1923) and resurrected the subfamilies Glycerinae and Goniadinae.

A few genera have been attributed to the Glyceridae during the course of its history (*Proboscidea* BLAINVILLE 1825, *Hemipodia* KINBERG 1865, *Hemipodus* QUATREFAGES 1866, *Rhynchobolus* CLAPARÈDE 1868, *Euglycera* VERRILL 1881, *Glycera* SAVIGNY 1818, *Glycerella* ARWIDSSON 1899, *Hamiglycera* EHLERS 1908, *Telake* CHAMBERLIN 1919 and *Paranereites* EISENACK 1939). Today the family consists only of the genera *Glycera*, *Glycerella* and *Hemipodia*. These three genera show clear differences in several diagnostic characters. Species of the genus *Hemipodia* have only uniramous parapodia, with compound chaetae and rod-like ailerons. Except for a few anterior chaetigers, all parapodia of *Glycera* and *Glycerella* are biramous, with simple capillaries in the notopodia and compound chaetae in the neuropodia. The ailerons of *Glycerella* are also rod-like, while they are more or less triangular or deeply incised in the genus *Glycera*.

Most of the relevant taxonomic, systematic papers only described new taxa. In addition to the work of GRUBE (1870a) and ARWIDSSON (1899) there are only a few important reviews of the family, which deal with geographicly limited areas: the North Sea by VOIT (1911), the coast of Japan by IZUKA (1912), the coast of North America by HARTMAN (1950), the coast of New Zealand by KNOX (1960b), the coast of South Africa by DAY (1967), the coast of South Korea by LEE (1984) and the Northeast Atlantic and Mediterranean Sea by O'CONNOR (1987).

This paper includes the first revision of all worldwide described Glyceridae and an identification key for the valid species. Only a quarter of the 166 taxa described to date represent valid species. The diagnostic taxonomic features for the different taxa are described and illustrated. Most of the drawings are based on light microscopy, but the proboscidial papillae were also studied using scanning electron microscopy to clarify their detailed structures and to avoided misinterpretations. Addionally all available biological and ecological data from the literature are listed.

Biological notes

Distribution, ecology and feeding behaviour

Polychaetes are among the most frequent and abundant marine metazoans in benthic environments. Despite their obvious importance, the literature on ecological roles of polychaetes remains largely anecdotal (FAUCHALD & JUMARS 1979). This is also true of the glycerids, because there are still very few studies on their biology and ecology. The potential for misidentification further compounds the problem, and consequently it is usually only possible to give generalised data.

The Glyceridae are distributed worldwide, mostly on sandy substrates, from the intertidal to the deep sea. They are considered carnivorous (FAUCHALD & JUMARS 1979), capturing their prey with the four jaws situated at the end of the eversible proboscis and killing it by the injection of venom (OCKELMANN & VAHL 1970, MANARANCHE et al. 1980). Examinations of stomach contents have shown that small crustaceans and other polychaetes are the favoured prey (MARE 1942: polychaetes; YONGE 1954: polychaetes and crustaceans; RETIÈRE 1967: polychaetes, amphipods, isopods, probably oligochaetes, cumaceans and small nemertines; MICHEL 1970a: polychaetes and amphipods). They themselves are predated by some birds (e.g. black-bellied plovers, BROWN 1993), as well as benthic fishes and crustaceans (TREADWELL 1937a). Spawning specimens of *Glycera dibranchiata* are preyed upon by herring gulls and striped bass, while spent epitokous stages are consumed by the mud shrimp (CREASER 1973).

Most of the glycerids form semi-permanent burrow systems in soft substrates (OCKELMANN & VAHL 1970). The feeding behaviour of *G. alba* is described by OCKELMANN & VAHL (1970). This species has a complex burrow system with several openings on the substratum surface. A hungry *Glycera alba* usually lies with the prostomium near the junction of a set of waiting-tubes, and with the posterior part of its body in a retreat-tube. In contrast, STOLTE (1932a) described some Mediterranean species which stick their pygidium out of a tube. The worm is sensitive to small changes in water pressure such as that caused by an animal moving around. The sensory structures perceiving the adequate mechanical stimuli seem to be limited to the prostomium. The glycerid will track the moving prey within its burrow system and this elicits the different stages of feeding behaviour. After location of the prey, the specimen will move to the opening that gives the best angle of attack. A short contact of the prostomial tip and the appendages with the potential prey functions to determine their size and chemical qualities. The tested prey is grasped by a rapid eversion of the proboscis, killed by the venom, and swallowed completely. The proboscidial papillae, which are presumed to be mechanoreceptors, might be used for the location of the prey just before their capture. During prey capture the proboscis everts, possibly preventing the use of other sensory structures on the prostomium (BÖGGEMANN et al. 2000).

OCKELMANN & VAHL (1970) found *Glycera alba* to prefer moving prey, such as small polychaetes and amphipods; it is less interested in sessile prey and will not attack animals encased in tubes. It was also found that *Glycera alba* will not feed outside its burrow system. These results were generally confirmed for *Glycera robusta* by RONAN (1977). Other species occur free-living under rocks or crawling on algae (FAUCHALD & JUMARS 1979). It is possible that the same species can change between the hemisessile and motile way of life.

Most investigators have characterized glycerids as carnivores (BLEGVAD 1914: *Glycera alba, G. goesi*; HUNT 1925: *G. alba, G. goesi, G. lapidum*; YONGE 1928, 1954: *G.* sp., *G. siphonostoma*; MARE 1942: *G. rouxii*; RETIÈRE 1967: Glyceridae; MACGINITIE & MACGINITIE 1968: *G.* sp.; MICHEL 1970a: *G. convoluta*; OCKELMANN & VAHL 1970: *G. alba*; EVANS 1971: *G. convoluta, G. siphonostoma*; PEARSON 1971: *G. alba*; HARTMANN-SCHRÖDER 1971, 1996: *G. alba, G. rouxii*; RONAN 1977: *G. robusta*; AMBROSE 1984a, b: *G. convoluta, G. dibranchiata*; GAMBI & GIANGRANDE 1985: *G. rouxi, G. convoluta-alba, G. tesselata*). Other authors have declared them to be detritivores (STOLTE 1932a: *Glycera unicornis*; KLAWE & DICKIE 1957: *G. dibranchiata*; SANDERS et al. 1962: *G. dibranchiata*; BANSE & HOBSON 1968: *G. americana, G. capitata, G. siphonostoma, G. robusta*; HARTMANN-SCHRÖDER 1971, 1996: *G. capitata, G. lapidum, G. gigantea*) or as being capable of feeding on faecal pellets (FRANKENBERG & SMITH 1967: *Glycera dibranchiata*). Some forms may fulfill part of their energy requirements by absorption of dissolved organic matter like amino acids and creatine from very dilute solution in the surrounding sea water (PRESTON & STEPHENS 1969; CHIEN et al. 1972; STEPHENS 1972; VAN PILSUM et al. 1975; STEVENS & PRESTON 1976, 1977, 1980a-c; CHIEN & RICE 1985; QAFAITI & STEPHENS 1988). On morphological grounds, FAUCHALD & JUMARS (1979) postulate that the carnivorous habit is the primary feeding mode among the glycerids, but that an unknown, probably small number of species have become detritivores. They further postulate that bathyal and abyssal glycerids may be able to use both feeding modes and that glycerids living in nutrient-rich environments may supplement either feeding mode by direct uptake of dissolved organic matter across the body wall.

The investigations of MANGUM & MIYAMOTO (1970) indicated that aerobic metabolism in *Glycera dibranchiata* shows a diurnal rhythm in the sense that it is significantly greater during daylight hours than at night, but there is no evidence to suggest that the metabolic rhythm reflects increased activity during daylight hours.

In addition to prey capturing, the glycerids show other types of movements. STOLTE (1928, 1932b) distinguished three forms: crawling, swimming and breathing movements, which were examined by observations on living material (*Glycera tridactyla*: France, Roscoff; *Glycera alba, Glycera tesselata* and *Glycera unicornis*: France, Banyuls-sur-Mer; *Hemipodia pustatula, Hemipodia simplex*: Brazil, Pontal do Sul).

The proboscis of the glycerids is not only involved in prey capturing, but also representes an efficient organ during the initial stage of burrowing. The worm thrusts its proboscis almost instantaneously into the sediment, when the prostomium makes contact with the natural habitat. The proboscis retracts and simultaneously the front part of the body is drawn into the tube thus formed. In contrast to the feeding behaviour, the jaws were never fully exposed during the burrowing process and evidently did not partake directly. Once in the sediment, the animal moves slowly through it by crawling and peristaltic/antiperistaltic movements. These observations are consistent with the burrowing behaviour of *Glycera alba* and *Glycera lapidum* described by OCKELMANN & VAHL (1970) and STØP-BOWITZ (1941). STØP-BOWITZ (1941) considered the fast burrowing as an escape response.

Swimming, also an escape response, is atypical for glycerids, although it used by epitokous stages for spawning and possibly for prey capturing (pers. com. L.H. HARRIS), despite the assertation that glycerids will not feed outside the burrow as supposed by OCKELMANN & VAHL (1970). If pulled from their burrows the animals first coil up to a 'spiral ton' and produce mucus to be reembedded into the sediment. After this they swim away tail first and uppermost and head lowermost in an open 'figure of 8' as described by RÖDER & RÖDER (1974, 1975). The swimming movement generally leads

upwards, but it also seems to be possible to swim sideways. After emerging from the sediment, bloodworms tend to swim in the upper layer of the water column, where they are transported by tidal currents to new locations. DEAN (1978) suggested that this migratory ability is not an uncommon phenomen, and one that is not related to spawning, because he often collected adult *Glycera dibranchiata* swimming at the surface of estuaries at night, at times of the year that were obviously outside of the breeding season. The epitokous stages of *Glycera dibranchiata* show a completely different method of swimming (SIMPSON 1962a). The spawning individuals swim head first, propelled by lateral undulations of the body. These movements resemble the sinusoidal type of swimming shown by *Nereis* and *Nephtys* (SIMPSON 1962a).

STOLTE (1928, 1932b) distinguished between a slow and a fast breathing movement. He mentioned that the glycerids appear to be insensible to H_2S and oxygen absence, but they are very sensitive to CO_2. In the presence of CO_2, the branchiae, if present, are extended and breathing begins.

Anatomy

Head appendages

The glycerid (and goniadid) prostomium differs from that of other polychaetes, because it is usually conical, consisting of a different number of rings of which the anteriormost one bears four appendages (fig. 5). In the earlier literature different terms are used for these head appendages at the tip of the prostomium. GRAVIER (1898a, b) interpreted the prostomial nerves and the lateral cell clusters as the palp section of the brain and the appendages as antennae. In contrast, HANSTRÖM (1927) proposed the idea that the prostomium consists of two fused palps. The main argument for this was that the nerves of the prostomium arose from the anterior ventral part of the brain (HANSTRÖM 1927, 1928). HANSTRÖM (1927, 1928) was first of the opinion that the appendages might be reduced antennae, but after the work of BINARD & JEENER (1928) he designated them as one pair of dorsal antennae and one pair of ventral palps (HANSTRÖM 1930). ÅKESSON's (1968) study of the ontogeny of the glycerid prostomium and also the histological work of KOLDEHOFF (1999) were not able to clarify the issue, but ORRHAGE (1999) strengthened HANSTRÖM's (1927) idea that the glycerid-goniadid prostomium represents a pair of fused palps. As a result, ORRHAGE (1999) interpreted the appendages as outgrowths from the prostomium and therefore as structures without direct equivalents in other polychaete families.

Sensory elements

In addition to freely terminating nerve fibres, a lot of ciliated primary sensory cells are present in the glycerids, located predominantly on the prostomium, the proboscis, the dorsal and ventral cirri and the pygidium (KEFERSTEIN 1862, EHLERS 1868, JOURDAN 1892, GRAVIER 1898a, STOLTE 1932a, MANARANCHE 1975, KOLDEHOFF 1999, BÖGGEMANN et al. 2000).

With the exception of the terminal and basal rings each of the rings of the prostomium carry cilia (STOLTE 1932a, KOLDEHOFF 1999). The ciliated rings on the prostomium are presumed to be mechanoreceptors, which seem to be sensitive to small changes in water pressure such as may be caused by an animal moving around (STOLTE 1928, 1932a; OCKELMANN & VAHL 1970). In contrast, the ventral prostomial sensory cells, described by BINARD & JEENER (1928), might control the eversion of the proboscis after their direct contact with the sediment (STOLTE 1928).

The proboscidial papillae are composed of 4-5 cells: one anterior mucous cell, one posterior serous cell and two to three multiciliated primary sensory cells which are presumed to be mechanoreceptors (BANTZ & MICHEL 1971, 1972; BÖGGEMANN et al. 2000).

The nuchal organs of the glycerids consist of a pair of epidermal, ciliated sensory structures located dorsally in the posterior region of the prostomium (WHITTLE & ZAHID 1974), which can be retracted by special muscles (STORCH & SCHLÖTZER-SCHREHARDT 1988). They were first described by WILLEMOES-SUHM (1873) on a living *Glycera alba*. The investigations of WHITTLE & ZAHID (1974) suggested that the nuchal organs are chemoreceptors. STOLTE (1932a) supposed that the nuchal organs are used to examine a possible prey, although a direct contact with the prey only takes place with the prostomial tip and the appendages (OCKELMANN & VAHL 1970). The prostomial appendages also seem to be chemoreceptors (STOLTE 1928).

MANARANCHE (1968, 1971, 1975) and SIMPSON (1991) expected light-sensitivite cell structures to be situated in the brain of the glycerids, whereas STOLTE (1928, 1932a) presumed such cells to be in the pygidium. MANARANCHE (1971) described arrays of paired smooth membranes or saccules in nucleus I of the cerebral ganglion of *Glycera convoluta* (syn. *Glycera tridactyla*) that might be light-sensitive. The sacculus, which is continuous with rough endoplasmic reticulum, is said to resemble stacks of membranes in certain ciliary photoreceptors. If these structures are really photoreceptors, they represent a new type in addition to the previously known ciliary and rhabdomeric types of structure (MANARANCHE 1971). The electron microscopy observation of SIMPSON (1991) reveals the presence of two ciliated cells which occur near the center of the cerebral ganglion in *Glycera dibranchiata*. These cells are part of a saccular apparatus (SIMPSON 1959), which was demonstrated by MANARANCHE (1966, 1975) to present the same characteristics in *Glycera convoluta* (syn. *Glycera tridactyla*) and *Glycera gigantea*. Intercerebral ciliated cells have been reported in a few other polychaetes, and photoreception

is their generally attributed function (SIMPSON 1991). It is possible that the glycerid saccular apparatus may have a sensory function in additon to the secretory role previously hypothesized (SIMPSON 1959). Photoreceptors are obviously not necessary for the glycerids which usually live in the sediment, but it might be useful for epitokous stages. In contrast to the regular tail first swimming motion, these spawning individuals swim head first (SIMPSON 1962a), which shows clearly the importance of the prostomium.

Jaws and venom glands

Since the jaws of the polychaetes must be able to penetrate the prey, particularly the exoskeleton of crustaceans, some means of hardening these structures is necessary. The investigations of VOSS-FOUCART et al. 1973, MICHEL et al. 1973 and MICHEL & DEVILLEZ 1978 concluded that the jaws are composed of tanned proteins and not of chitin as always described in earlier studies (EISENACK 1939). The jaws of the Nereidae, Nephtyidae and Sigalionidae contain high levels of aromatic amino acids whereas the jaws of the Eunicidae and Glyceridae have only low proportions (MICHEL et al. 1973, VOSS-FOUCART et al. 1973). These major differences in chemical composition may explain the lack of fossil Nereidae, Nephtyidae, and Sigalionidae scolecodonts. The apparently harder jaws of recent Eunicidae and Glyceridae are not soluble in KOH, whereas the jaws of the Nephtyidae and Nereidae are easily soluble (SZANIAWSKI 1974). Furthermore, the jaws contain large concentrations of different elements. For example, calcium carbonate is deposited in the jaws of eunicids (VOSS-FOUCART et al. 1973) and zinc in nereids (BRYAN & GIBBS 1979). MICHEL et al. (1973) considered that iron, and perhaps copper, were involved in the mineralization of the glycerids jaws, and were responsible for the hardness of these structures, like magnetite in the radular teeth of some molluscs (LOWENSTAM 1962 a-b, TOWE & LOWENSTAM 1967). However, the studies of GIBBS & BRYAN (1980) suggested that copper is the principal metal component, and that it is concentrated in the distal tip of the jaw. The present study on 11 glycerid species (see "Materials and methods", p. 21) confirm the previous investigations of GIBBS & BRYAN (1980). High copper levels are presented on the distal part of the jaws, in addition to sulphur and calcium which are much more evenly distributed, but iron is absent (fig. 2). The ailerons contained no copper or iron, whereas the chevrons of *Goniada maculata* ÖRSTED 1843(a) showed high levels of iron and the paragnaths of *Nephtys hombergii* SAVIGNY 1818 high levels of calcium and iodine.

The jaws of the glycerids (fig. 7) are always associated through special ducts with the venom glands (MICHEL 1966). Each of the venom ducts ends at the tip of the jaw and additionally connects with the series of pores on the ventral side of the jaw (CHARLETTA & BOYER 1974). In addition to phospholipases and proteases (MICHEL & ROBIN 1972, MICHEL & KEIL 1975, BON et al. 1985b) the glands of *Glycera convoluta* (syn. *Glycera tridactyla*) secrete a biologically active venom called α-glycerotoxin (BON et al. 1985a, b; MICHEL-SAULNIER 1995). It is a globular protein which has an apparent molecular weight of about 300.000 daltons, and is devoid of phospholipase or protease activities (MANARANCHE et al. 1982; THIEFFRY et al. 1982, MOREL et al. 1983; BON et al. 1985a, b). This neurotoxin binds to presynaptic membranes, is able to increase the spontaneous release of transmitter in nerve terminals, induces a significant increase in the frequency of miniature potentials and rapidly kills the prey if injected into the coelomic cavity (MANARANCHE et al. 1980). In contrast, *Glycera dibranchiata* venom is devoid of α-glycerotoxin (BON et al. 1985b). KAGAN et al. (1980, 1982) have shown that the venom of *Glycera dibranchiata* induces an ion permeable channel in lipid bilayers remarkably similar to that induced by α-latrotoxin (black widow spider venom). These authors proposed that both *Glycera* and *Latrodectus* (black widow spider) venoms exert their biological action by the same mechanism. The presence of a compound producing ion permeable channels in plasma membranes has not been demonstrated in the venom of *Glycera convoluta* (BON et al. 1985b). Such components might be present, because one of the fractions contains proteins with molecular weights similar to that of α-latrotoxin and shows the highest toxic activity for crustaceans (MICHEL & KEIL 1975, BON et al. 1985b). Usually the jaws of smaller glycerids are not able to penetrate the human integument and furthermore the venom mostly leads only to a local epidermal reaction (KLAWE & DICKIE 1957), but in a few cases allergic reactions have been known (pers. com. F. PLEIJEL)

Coelom condition and osmoregulation

Most of the segmental septa and mesenteries of the glycerids are strongly reduced (MEYER 1929) and their blood vascular system is either completely absent or is limited to a dorsal and a ventral longitudinal blood vessel (QUATREFAGES 1866, ARWIDSSON 1897, VOIT 1911, STOLTE 1932b, SMITH & RUPPERT 1988, SMITH 1992). The common name 'bloodworm' is attributed to the reddish colour of living specimens which is caused by their high content of haemoglobin. The haemoglobin of the glycerids is associated with erythrocytes and their structure is well known (IMAMURA et al. 1972, PADLAN & LOVE 1974, COOKE & WRIGHT 1985a-b, SIMONS & SATTERLEE 1989). In addition to the haemoglobins a monomeric myoglobin is present in the muscles of the body wall and especially in the proboscis muscles (HOFFMAN & MANGUM 1970, TERWILLIGER et al. 1976, TERWILLIGER & GARLICK 1978, TERWILLIGER & TERWILLIGER 1981).

ANDERSON (1980) reported the presence of hemo-

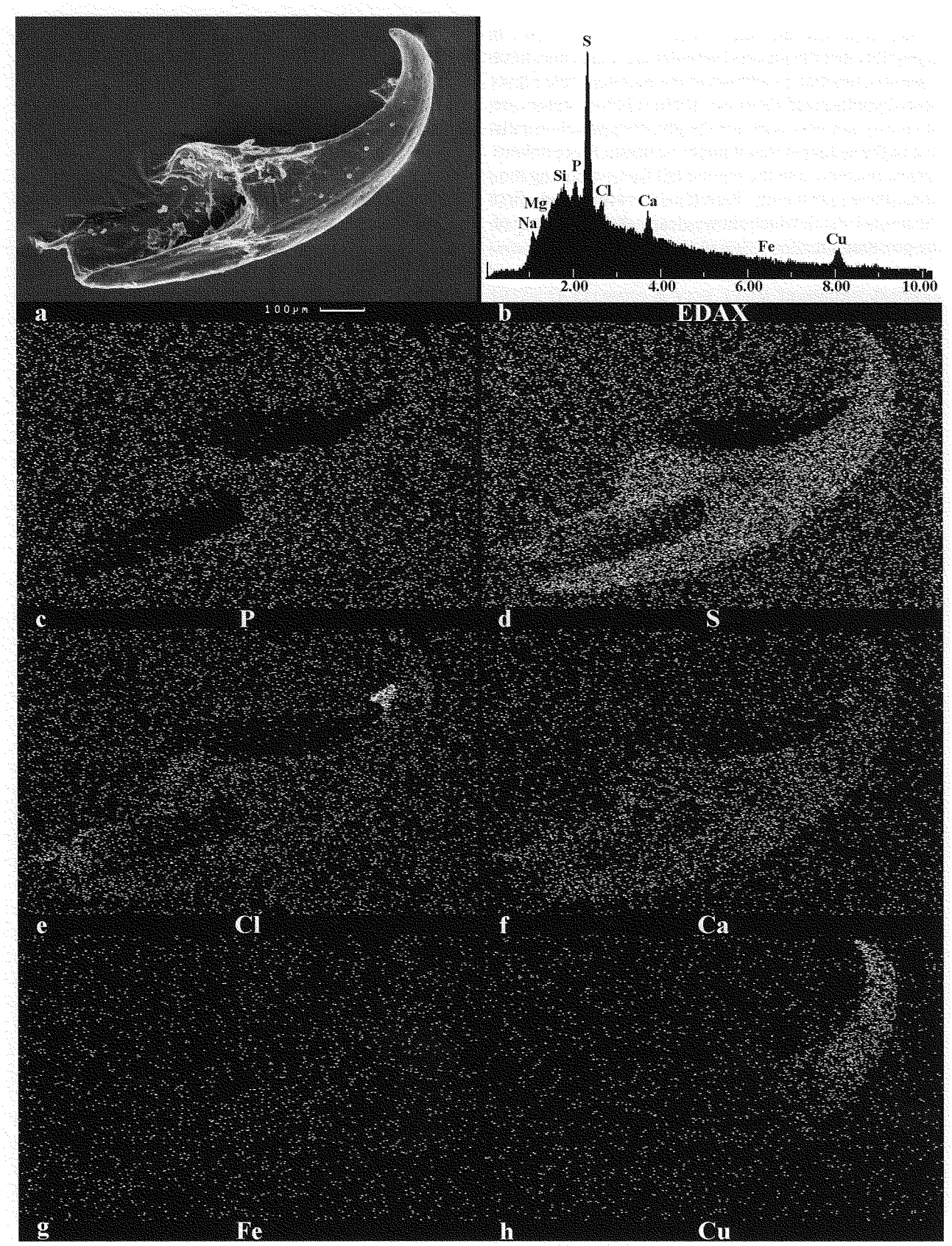

Fig. 2: *Glycera tridactyla* (SMF 9656). – a: Jaw. b: Print from the EDAX PV9800. c-h: Distribution of different elements on the jaw. (Na: sodium, Mg: magnesium, Si: silicon, P: phosphorus, S: sulphur, Cl: chlorine, Ca: calcium, Fe: iron, Cu: copper)

lysins and hemagglutinins in the coelomic fluid of *Glycera dibranchiata*. It is probable that these factors participate in immune mechanisms. Furthermore, ANDERSON & CHAIN (1982) and CHAIN & ANDERSON (1983a-c) found an antibacterial factor (GAF = *Glycera* antibacterial factor), which was active against several Gram-negative bacteria.

The glycerids have been shown to be euryhaline osmoconformers tolerating a wide range of salinities (MACHIN 1975, COSTA et al. 1980). During hypoosmotic stress the erythrocytes of *Glycera dibranchiata* first of all show an osmotically induced swelling, which is followed by a partial recovery of the original cell volume (MACHIN & O'DONNELL 1977, COSTA et al. 1980). The volume recovery is achieved by reducing the intracellular free amino acid content (COSTA et al. 1980, PIERCE & MAUGEL 1985). In addition, COSTA & PIERCE (1983) found that the intracellular K^+ content is also utilized to effect the volume regulation during the first part of the response. This process is not affected by the protonephridia, because they always produce urine which is iso-osmotic to the coelomic fluid, at least in dilute media (MACHIN 1975).

Digestive system and excretion

The digestive tract of the polychaetes begins with a ventral mouth opening on the peristomium and ends with a dorsal anus on the pygidium. Usually, it is separated into three sections: fore-, mid- and hindgut. The foregut of the glycerids consist of a muscular eversible proboscis and the midgut lies more or less free in the body cavity attached only by the dorsal mesentery (STOLTE 1928). The anus of the glycerids is situated dorsally on the pygidium, but it seems to be nonfunctional because the undigested remains of the food are regurgiated by the proboscis and deposited outside the burrow enclosed in a three-layered peritrophic membrane (STOLTE 1932a, MACGINITIE & MACGINITIE 1968, OCKELMANN & VAHL 1970, VAHL 1976, MICHEL & DEVILLEZ 1978).

OCKELMANN & VAHL (1970) and VAHL (1976) studied the digestion of *Glycera alba*. The prey is captured by the jaws, killed by the injection of venom and then the additionally produced proteolytic enzymes (MICHEL 1968, 1970b; MICHEL & ROBIN 1972; MICHEL & KEIL 1975; BON et al. 1985b) start the digestion, which takes place in the retreat-tube of their burrow system. The anterior mucus cells of the proboscidial papillae envelope the prey, thereby supporting its transfer to the digestive tract and protecting the proboscis from damage. First the food arrives at the posterior part of the pharynx, which is divided into two distinct regions (DALES 1962), where proteolytic enzymes are produced. Additionally, in the tongue-shaped appendices of the proboscis of *Glycera convoluta* (MICHEL 1969b) and also in the four pharyngeal epithelium glands, serous glandular cells occured which secrete a chymotrypsin-like enzyme (MICHEL 1970a-b, 1972; MICHEL & IMHOFF 1975). The food has been found to enter the oesophagus within 15 minutes of feeding, together with further proteolytic and additional lipolytic enzymes produced by the intestine (MICHEL 1969a, VAHL 1976). A considerable part of the digestion occurs in the oesophagus even though no enzymes or glands are present in this tissue. After five hours, the food bolus passes into the intestine and the inner, chitin-containing layer of the peritrophic membrane is formed during the passage. The epithelial lining of the intestine then forms the two outer mucopolysaccharide layers. In the intestine the digestion continues, and reabsorption takes place. Except for chitinous parts, larger lipid deposits, eggs, embryos and some pigments, almost the whole prey can be digested. The undigested remains of the food are regurgiated to the sediment surface.

The digestion requires always about one day, and there is no obvious correlation between size or kind of prey and digestion time. The animals only feed about every five days on a single prey; therefore the digestive tract is often empty. *Glycera alba* has a potential for fast growth and very high growth efficiency, combined with very low energy expenditure, which is probably due to its almost hemisessile mode of life (VAHL 1976).

The excretory system of the glycerids is a nephridial complex which is composed of a protonephridium, a nephridial or phagocytal sac and a ciliated organ (GOODRICH 1898, 1945; FAGE 1906; BRANDENBURG & KÜMMEL 1961; SMITH & RUPPERT 1985). This complex occurs on almost all segments, attached to the ventral body wall near the parapodial basis (GOODRICH 1898, 1945). The protonephridia consist of terminal cells, with a filtration weir and a single flagellum, which are called solenocytes (GOODRICH 1898, 1945; FAGE 1906; BRANDENBURG & KÜMMEL 1961; SMITH & RUPPERT 1985). The nephridial complex is used for filtration and reabsorption (GOODRICH 1898, 1945; SMITH & RUPPERT 1985).

Reproduction and regeneration

Epitokous stages and their spawning

The sexes of glycerid species are separate and possess segmentally paired gonads (SIMPSON 1962b). Gametogenesis occurs in the coelom and requires about one year (KLAWE & DICKIE 1957). At the end of this stage the bodies undergo varying degrees of alteration and pelagic individuals develop from the previous atoke, benthic specimens. Metamorphosis is associated with more or less distinct morphological changes which has lead to some of the epitokous stages being described in the past as separate species (*Glycera convoluta* var. *suchumica* CZERNIAVSKY 1881, *Glycera minuta* var. *suchumica* CZERNIAVSKY 1881, *Glycera papillosa* var. *nigticans* Q. WU 1994, *Glycera setosa* ØRSTED 1942 and *Telake epipolasis* CHAMBERLIN 1919). The parapodia are partially enlarged (fig. 3) and equipped with numerous elongated chaetae, which obviously facilitate the swimming (*Glycera alba*: ARWIDSSON 1899, OCKELMANN & VAHL

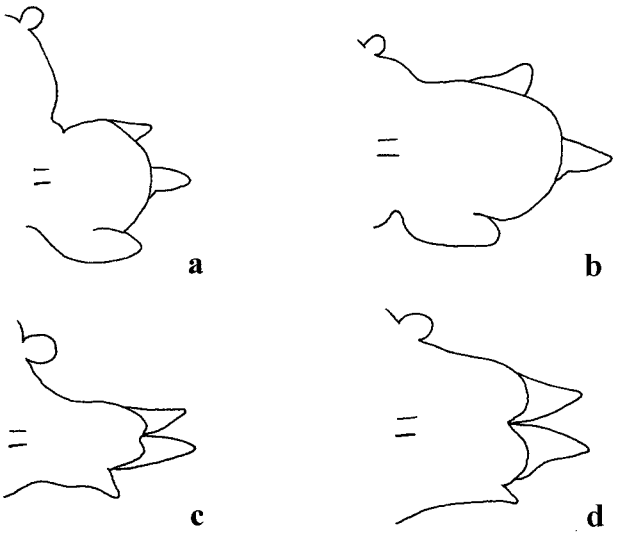

Fig. 3: *Glycera capitata*. – a: Parapodium of chaetiger 50 of an atokous specimen (ZMB Q. 4306). b: Parapodium of chaetiger 50 of an epitokous specimen (ZMB Q. 4331). *Glycera brevicirris* (USNM 19717). – c: Parapodium of chaetiger 32, d: parapodium of chaetiger 33 of an epitokous specimen. [a-d: posterior view, without chaeta]

1970; *Glycera capitata*: ARWIDSSON 1899, AUGENER 1928, STØP-BOWITZ 1941; *Glycera dibranchiata*: SIMPSON 1962a; *Glycera lapidum*: MCINTOSH 1910). Sometimes simple chaetae appear in the neuropodia (*Glycera alba*: ARWIDSSON 1899, *Glycera capitata*: ARWIDSSON 1899, *Glycera sphyrabrancha*: AUGENER 1925a). In most of the species the morphological changes occur on almost all parapodia (fig. 3a-b), whereas the epitokous stages of *Glycera brevicirris* have normal parapodia in the anterior part of the body and enlarged parapodia with more chaetae in the posterior part (fig. 3c-d). This change happens abruptly and the body seems to be divided into two regions (CHAMBERLIN 1919b). Furthermore, an atrophy of the body musculature and the digestive tube often occurs, which makes the absorption of food impossible (*Glycera alba*: ARWIDSSON 1899, OCKELMANN & VAHL 1970; *Glycera capitata*: EHLERS 1868, ARWIDSSON 1899, AUGENER 1928; *Glycera dibranchiata*: SIMPSON 1962a; *Glycera lapidum*: ARWIDSSON 1899). The bodies of sexually mature worms become distended by the fully developed gametes which fill the body cavity and are visible through the thin body wall. These gametes are responsible for the characteristic colours of mature animals (females pale brown, males creamy) in contrast to the reddish-brown colour of immature ones (KLAWE & DICKIE 1957).

SIMPSON (1962a) reported that the epitokous stages of *Glycera dibranchiata* swam head first, propelled by lateral undulations of the body. The males emitted streams of sperm while swimming slowly at the surface, whereas the females swam very rapidly at the surface and then suddenly the eggs, up to 10 million in number, are extruded through the mouth or ruptures of the body wall. The liberation of the gametes happens all at once and the specimens typically die shortly thereafter (KLAWE & DICKIE 1957: "ghost worms"), although CREASER (1973) observed that some males dig back into the sediment after spawning. Most of the intertidal populations of *Glycera dibranchiata* spawn when three years old, but a small fraction spawn when four or five years old (KLAWE & DICKIE 1957, CREASER 1973). The spawning of *Glycera dibranchiata* occurs in the afternoon, between two hours before and one hour after high water (CREASER 1973). The breeding period of species in a specific geographic area seems to be very constant (*Glycera americana*: New England region, July to August, PETTIBONE 1963; *Glycera brevicirris*: Gilbert Islands, January, CHAMBERLIN 1919b; Bahamas, August, see "Material examined", p. 44; *Glycera capitata*: Greenland, June, ARWIDSSON 1899; Spitzbergen, June, AUGENER 1928; Norway, May to July, STØP-BOWITZ 1941; White Sea, May to June, LEBSKII 1970; British Columbia, October, see "Material examined", p. 36; [described as *Glycera kerguelensis*]: South Fireland, October, ARWIDSSON 1899; *Glycera dibranchiata*: Nova Scotia and Maine, May, KLAWE & DICKIE 1957; Maryland, November, SIMPSON 1962a; Maine, June to July, CREASER 1973; *Glycera lapidum* [described as *Glycera capitata*]: Helgoland, September, HUSEMANN 1992; *Glycera ?sphyrabrancha*: Puerto Rico, October, ALLEN 1957). SIMPSON (1962a) suggested the possibility of a second breeding season for *Glycera dibranchiata* at Maryland and that the water temperature is the decisive stimulus for spawning.

Larval development

Only a few papers deal with the larval development of glycerids, but the investigated species were found to be relatively consistent (*Glycera alba*: THORSON 1946; *Glycera capitata*: LEBSKII 1970; *Glycera convoluta* (syn. *Glycera tridactyla*): FUCHS 1911, CAZAUX 1967; *Glycera dibranchiata*: KLAWE & DICKIE 1957, SIMPSON 1962b; *Glycera lapidum* [described as *Glycera capitata*]: HUSEMANN 1992; *Glycera tenuis*: BLAKE 1975; *Hemipodus borealis*: BLAKE 1975). LEBSKII (1970) suspected that the larvae are mainly pelagic and lecithotrophic.

The spherical trochophore larvae (length 115-450 µm) possess a prototroch with long cilia (HUSEMANN 1992) and usually an addional acrotroch. In the early metatrochophora stages segments become visible. On the episphere the four appendages and on the pygidium the two anal cirri appear. The parapodia first consist only of the neuropodia and a few compound chaetae. The erpochaeta (length 550-1100 µm), composed of seven to nine segments, has the typical annulated prostomium and

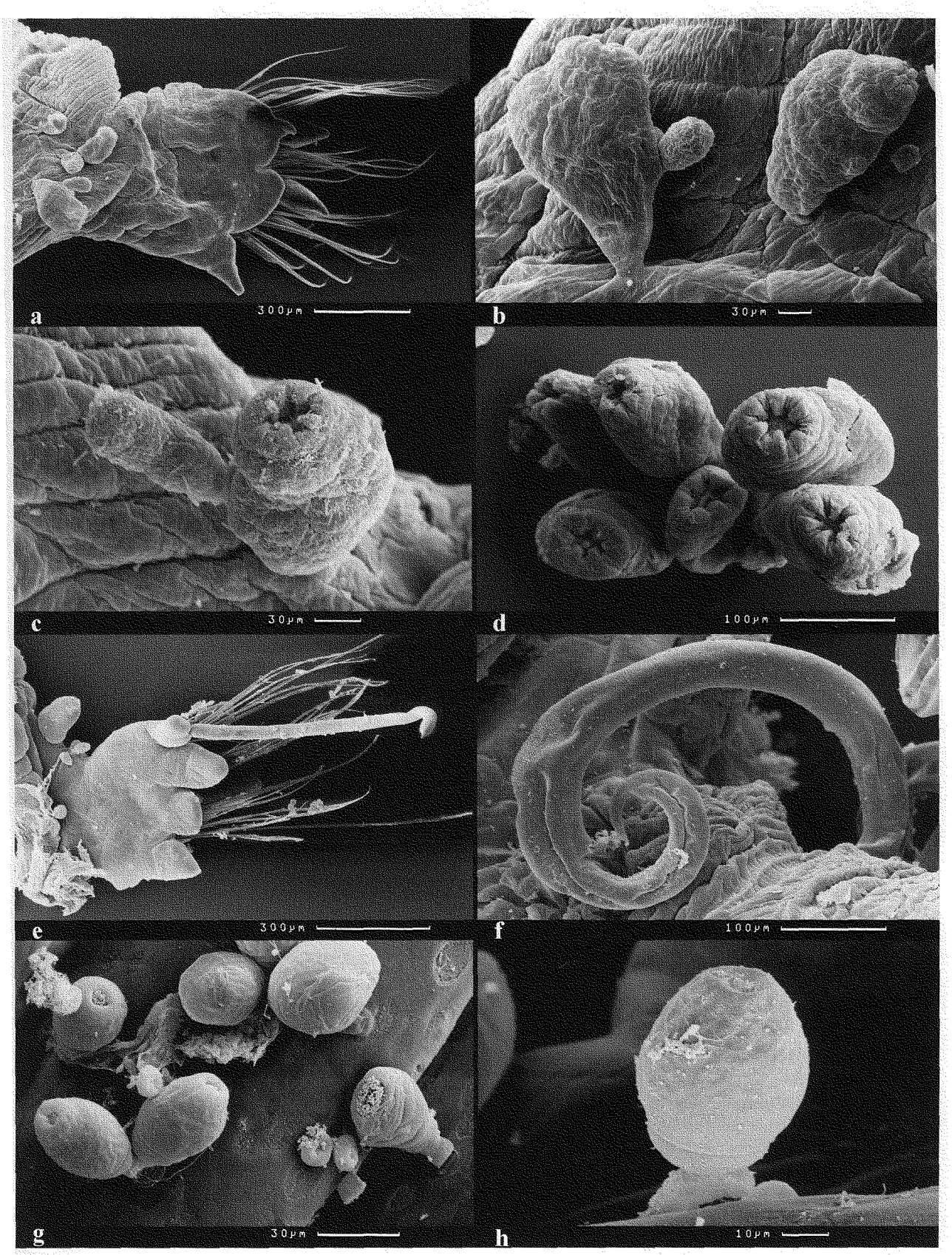

Fig. 4: a: Parapodium of *Glycera pseudorobusta* (SMF 9131) with kamptozoa. b-c: Kamptozoa of SMF 9131. d: Kamptozoa of *Glycera lamelliformis* (ZMB 6666 partim). e: Parapodium of *Glycera tridactyla* (SMF 9659) with nematode and ciliates. f: Nematode of *Glycera lamelliformis* (NZOI T496). g-h: Ciliates of SMF 9659.

pre- and postchaetal lobes together with ventral cirri on most of the parapodia. In the juvenile benthic stages the prototroch is completely reduced and most of the morphological changes are complete. From this stage feeding is possible (HUSEMANN 1992). The trochophora develops about one day after fertilization and the development to the erpochaeta requires a further two (*Glycera capitata*: LEBSKII 1970) or three weeks (*Glycera lapidum*: HUSEMANN 1992). It is suspected that the larvae of *Glycera dibranchiata* have either a short planktonic existence or live close to the bottom, because they are never found in the water column (KLAWE & DICKIE 1957, VADAS & BRISTOW 1985).

Regenerative capacity

STOLTE (1928) is of the opinion that the regenerative capacity of glycerids is very low and that the specimens die after losing body fragments. However, individuals are often examined which lack the posterior part of the body and subsequently regenerate a new tail. OCKELMANN & VAHL (1970) also described that the loss of the pygidium did not impair burrowing and feeding activities after the wound had healed.

Parasitism and commensalism

Endoparasitic gregarines (Protozoa: Sporozoa) are often found in the glycerids (PIXELL-GOODRICH 1916, GUNDERSON 1984) and sometimes also ectoparasitic nematodes (FAUVEL 1936b, MCINTOSH 1885) as well as probable commensal epibionts. MACGINITIE & MACGINITIE (1968) reported that *Glycera robusta*, common in regions of *Zostera*, often plays host to a species of a stalked, colonial protozoan of the genus *Zoothamnium*, which grows attached between the parapodia. The organisms are typically situated on the parapodia and partially resemble branchiae (fig. 4), which have lead to descriptions of new species (*Glycera manorae* FAUVEL 1932, *Glycera dentribranchia* LEE 1984). During this study colonial protozoans were recognised on various glycerid species from all over the world. In addition to nematodes (fig. 4e-f; on *Glycera lamelliformis*: New Zealand (NZOI T496); *Glycera ovigera*: New Zealand, Auckland (ZMB 4863); *Glycera tridactyla*: France, Roscoff (SMF 9659)) and ciliates (fig. 4e, g-h; on *Glycera tridactyla*: France, Roscoff (SMF 9659)), some forms resembling members of the new phylum Cycliophora described by FUNCH & KRISTENSEN (1995) have been observed in the present study (fig. 4a-d; on *Glycera capitata*: U.S.A., Alaska (USNM 22538), Canada, Vancouver Island (USNM 35991); *Glycera gigantea*: Italy, Naples (SMF 9514) + (ZMB Q. 4334), Italy, Messina (SSM 658 + 689 + 690); *Glycera lamelliformis*: New Zealand, Cook Strait (BMNH 1885.12.1.242), New Zealand, Tauranga (ZMB 6666 partim), New Zealand (NZOI T491 + T509); *Glycera ovigera*: Australia, Victoria (MV F 80187), Australia, Western Australia (WAM 61-96), New Zealand, Auckland (ZMB 4863); *Glycera pseudorobusta*: U.S.A., Massachusetts (USNM 33378), U.S.A., Georgia (SMF 9131); *Glycera robusta*: Canada, Vancouver Island (USNM 35956), U.S.A., California, HZM V-12595). However, R.M. KRISTENSEN has identified these specimens as colonial kamptozoa (= Entoprocta).

Collecting, observing and culturing

Some of the larger glycerid species (e.g. *Glycera alba*, *Glycera dibranchiata*, *Glycera robusta*) are popular subjects for ecological (e.g. OCKELMANN & VAHL 1970), physiological (e.g. COSTA & PIERCE 1983, CHEN & PRESTON 1987) and biochemical studies (e.g. COOKE et al. 1987), because they are easy to handle and usually remain in good condition (STOLTE 1932a). Most of the ecological investigations have taken place in aquaria and instead of natural sediment, artficial substrates such as absorbent cotton and even plastic or glass tubes can serve as spare burrows (DEAN & MAZURKIEWICZ 1975). It is possible that the individuals show an unnatural behaviour under such conditions, but observations in situ are difficult. JOULE (1983) developed an effective method for tagging marine polychaetes, which could be of considerable aid for studies of biology and population dynamics. Coded microwire tags of magnetic, biologically inactive stainless steel were placed in the coelomic cavity of the animals, which could then be detected with a magnetic field detector (JOULE 1983).

Since the beginning of the 19th century the glycerids have also been used as fish bait for sport and commercial fisheries (KLAWE & DICKIE 1957; DOW 1964, 1973; TAYLOR & SALOMAN 1968; CREASER et al. 1983; BROWN 1992, 1993; OLIVE 1994). The baitworms form the fourth largest fishery in Maine, behind lobsters, clams, and total finfish (WILSON & RUFF 1988).

The investigations of VADAS & BRISTOW (1985) on *Glycera dibranchiata* demonstrated that intensive harvesting of glycerids reduced densities, created a population bottleneck, and enhanced genetic drift, which rapidly altered the genetic structure of the population. The loss of genetic variability is important because high genetic diversity is generally advantageous for the continued survival and evolution of a species. Therefore, to increase productivity and to reduce the risk of overharvesting it is advantageous to culture polychaetes instead of collecting wild animals. This, however, requires the development of specific techniques if such a venture is to yield profit. The main difficulty in rearing sea worms is the feeding and culture of the planktotrophic larvae and juvenile animals (TAYLOR & SALOMAN 1968). DEAN & MAZURKIEWICZ (1975) described several methods and techniques of culturing polychaetes and there is a successful sea worm farm, that principally cultures nereids and arenicolids, based in Newcastle under the directorship of P. OLIVE (pers. com. K. LAST).

Taxonomic features

The main diagnostic characters for species identification are the shape and number of pre- and postchaetal lobes, the presence or absence of branchiae and their position on the parapodia, the mode of segmental annulation (bi- or triannulate), the shape of the aileron, and the structure of the proboscidial papillae (fig. 5). Each of these characters may sometimes be problematic, but an attentive and critical analysis will lead to a correct identification. Some of the partially employed features (colour, prostomium, jaws, chaetae) show no or such slight inter-specific variation that they are of little taxonomic use.

Colour

The glycerids, commonly called bloodworms, usually appear reddish because the haemoglobin in the coelomic fluid is visible through the more or less transparent integument (fig. 6a-b). Investigations at the marine institutes of Roscoff and Banyuls-sur-Mer on different species (*Glycera alba*, *G. tesselata*, *G. tridactyla* and *G. unicornis*) demonstrated that there are no species-specific colour patterns. The colour of a fixed specimen (fig. 6c) and its pigmentation are also variable and seem to be dependent on the fixative and the time kept in alcohol or formalin. The original more or less uniform pigmentation is best preserved on the parapodia and the prostomium and is indicated by stippling in the drawings (see "Systematic section").

Prostomium

The prostomium (fig. 5) is usually conical and consists of a different number of rings, each of which is composed of two more or less distinct annuli. The anteriormost annulus bears four appendages and the posteriormost one pair of nuchal organs. Eyes are not present. The

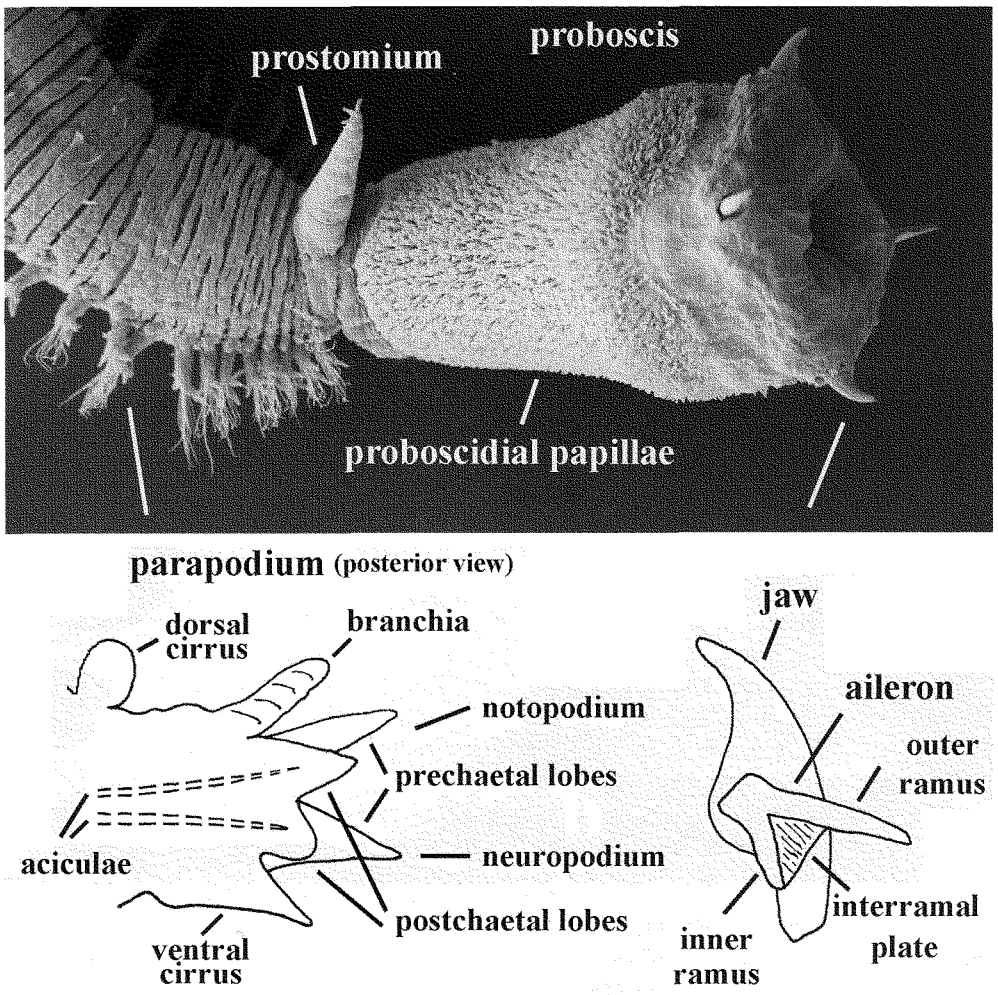

Fig. 5: *Glycera alba*. – Position of the main diagnostic characters.

Fig. 6: *Glycera tridactyla* (SMF 9659). – a-b: Living specimens. d-e: Parapodia with branchiae. *Glycera robusta* (SMF 9447). – c: Fixed specimen. [a-b, e: dorsal view, c: latero-ventral view, d: anterior view; a-b, d-e: original photograph: D. FIEGE (SMF), c: original photograph: S. TRÄNKNER and J. STECHER (both SMF)]

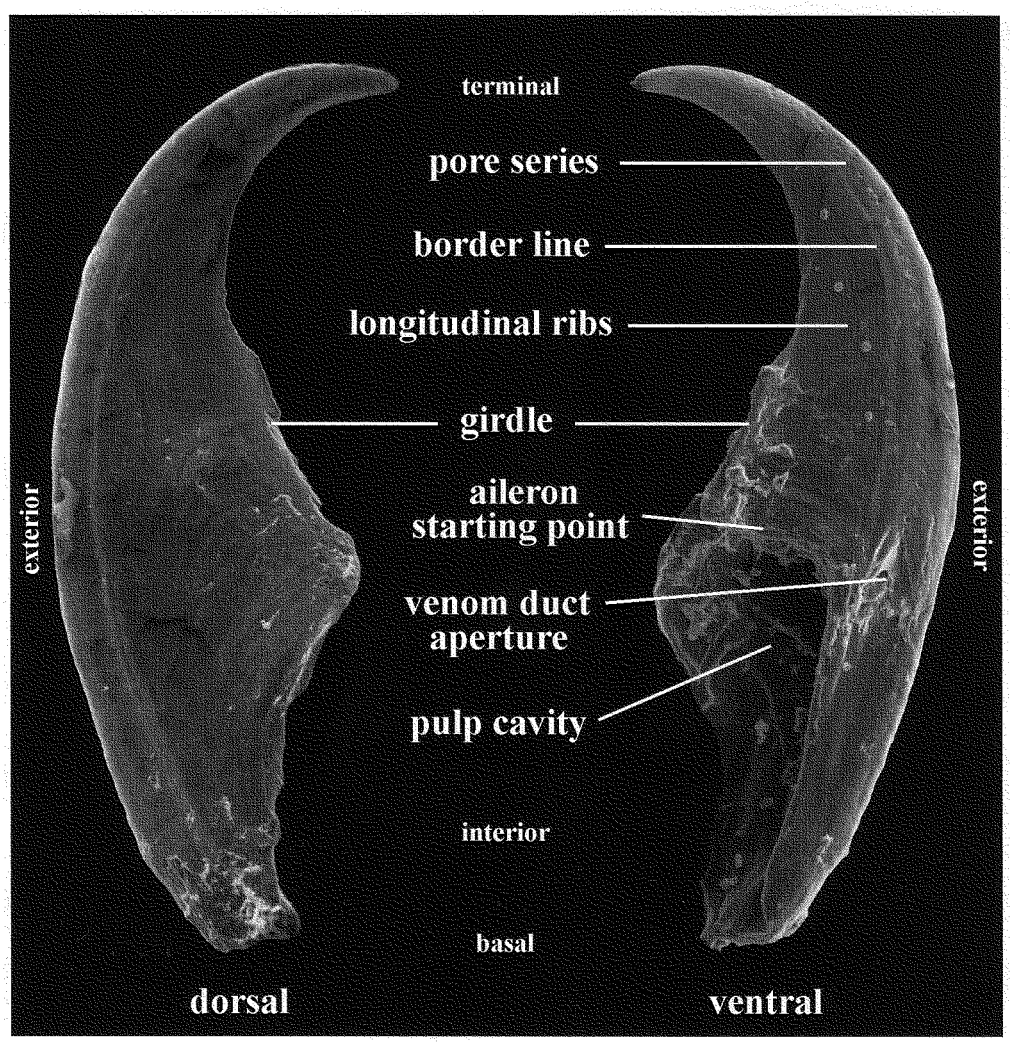

Fig. 7: Jaw of *Glycera tridactyla* (terminology after WOLF 1977).

prostomium is not a good feature for identification purposes, because of the variability in size and number of rings.

Some authors (QUATREFAGES 1850, CLAPARÈDE 1863, GRAVIER 1898a) have described species (e.g. *Glycera convoluta* and *Glycera fallax*) with a retractile prostomium. This 'phenomenon' is, however, only a fixation artifact and by no means limited to specific species (STOLTE 1932a).

Jaws

The four jaws of the glycerids are situated at the end of the eversible proboscis (fig. 5) and are bilateral-symmetrically arranged (MICHEL 1966). Each of the jaws bears an aileron (fig. 5). A dorsal and a ventral side is distinguishable on the jaws (fig. 7), whereby the ventral side is defined by the presence of the pulp cavity (WOLF 1977).

WOLF (1977) tried to use the jaws (fig. 7) as a taxonomic feature. His investigation shows an inter-specific variability in the finer structures of the jaws (size of the pores and their distance from each other, the distance between the pore series and the border line, the number of longitudinal ribs, and the shape of the girdle), but also an intra-specific variation which makes it unsuitable as a taxonomic aid. It is possible, however, that the intra-specific variation is based on misidentification, because all of the species studied here (see "Materials and methods", p. 21) possess clear differences in their finer structures. Further SEM examinations are therefore needed to clarify the diagnostic importance of the jaws. This is less important for recent species, but it might be useful for the scolecodonts. Scolecodonts are fossilized elements of the proboscidial armatures of polychaetous annelids, including glycerids (JANSONIUS & CRAIG 1971). Three different species of Glyceridae (†*Glycera baltica* (EISENACK 1939), †*Glycera glaucopsammensis* CHARLETTA & BOYER 1974, †*Glycera pilicae* SZANIAWSKI 1974) are only known from their scolecodonts. The oldest ones are from the Triassic (ca. 250 million years) and their general structure is exactly the same as in the jaws of recent

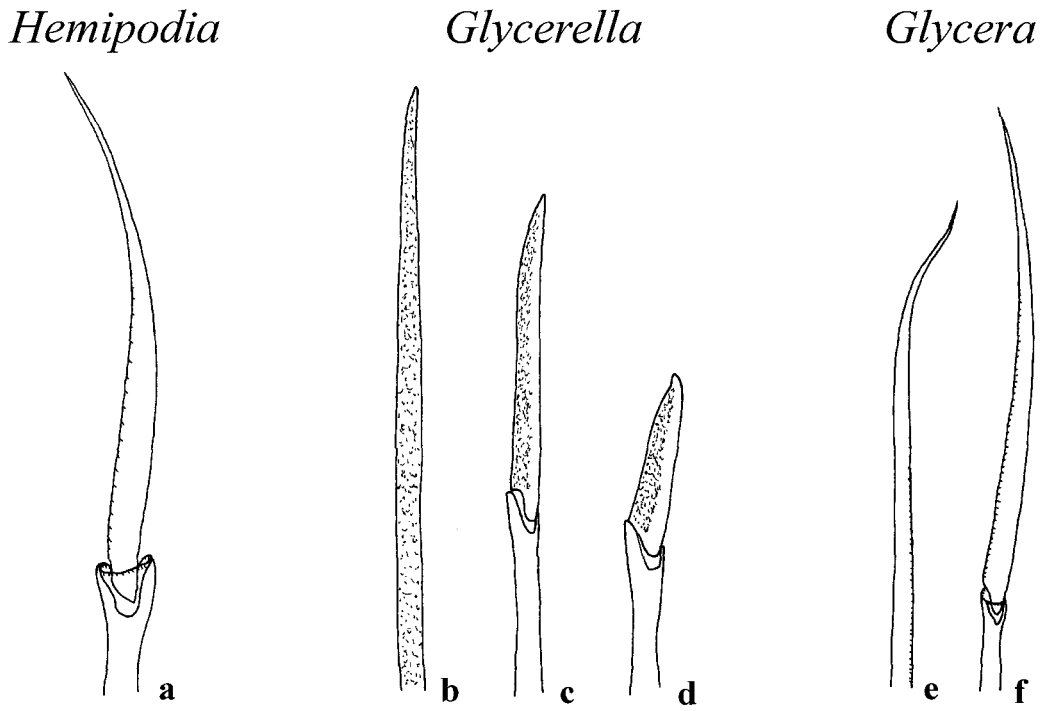

Fig. 8: *Hemipodia.* – a: Spinigerous compound chaeta. *Glycerella.* – b: Simple capillary, c: spinigerous, d: and falcigerous compound chaetae. *Glycera.* – e: Simple capillary, f: and spinigerous compound chaeta.

species (MIERZEJEWSKA & MIERZEJEWSKI 1977; SZANIAWSKI 1974, 1996; SZANIAWSKI & WRONA 1987). The stratigraphic use of scolecodonts is still not very significant, partly because of limited knowledge (SZANIAWSKI 1996). SZANIAWSKI (1996) suggested that detailed studies of scolecodonts, and improved knowledge of their taxonomy, will certainly increase their value for geology.

Chaetae

The chaetae show such slight inter-specific variation that they are only used for classification into genera (fig. 8). The parapodia of the species of *Hemipodia* are all uniramous, with one acicula, and bear spinigerous compound chaetae (fig. 8a). *Glycerella* and the species of *Glycera* possess parapodia with noto- and neuropodia, each of which contains one acicula. The notochaetae are simple capillaries (fig. 8b, e) and the neurochaetae are usually compound (fig. 8c-d, f). The epitokous stages may also infrequently bear simple capillary chaetae in the neuropodium. The compound chaetae of the species of *Glycera* are exclusively spinergerous, whereas *Glycerella* have spinigerous (fig. 8c) and falcigerous chaetae (fig. 8d).

Parapodia

The parapodia (fig. 5) are either all uniramous (species of *Hemipodia*, fig. 9a) or all biramous – usually except for the first two chaetigers – with two prechaetal and one or two postchaetal lobes (*Glycerella* and species of *Glycera*, fig. 9b-k). The rami are indistinctly separated from each other, but clearly indicated by two aciculae. The prechaetal lobes are always slender triangular to digitiform in shape, but sometimes differ in length (fig. 9b, c-d, f). The postchaetal lobes are short and rounded (fig. 9g, e.g. *Glycera brevicirris*), blunt triangular (fig. 9i, e.g. notopodial lobe of *Glycera robusta*) or slender triangular (fig. 9k, e.g. *Glycera cinnamomea*), and appear in the species of *Glycera* in different combinations (fig. 9c-k). The parapodial lobes of juvenile specimens may be divergent from adult specimens (fig. 9l-n, e.g. *Glycera americana*). Usually the notopodial lobes are shorter and not completely developed, whereas the parapodial lobes of very large specimens are compact and dumpy. In a few cases, distorted parapodia with additional or carved lobes are present.

Branchiae

FAUCHALD & ROUSE (1997) considered that the extensions from the parapodia in some glycerids were not branchiae since a closed circulatory system is absent. However, a branchia is defined by an increase in surface area and by a thin integument. Both can be found in the parapodial structures of the glycerids as can a well developed circulatory system (fig. 10) as described by GRUBE (1855) and MEYER (1929). Therefore use of the term branchiae seems appropriate.

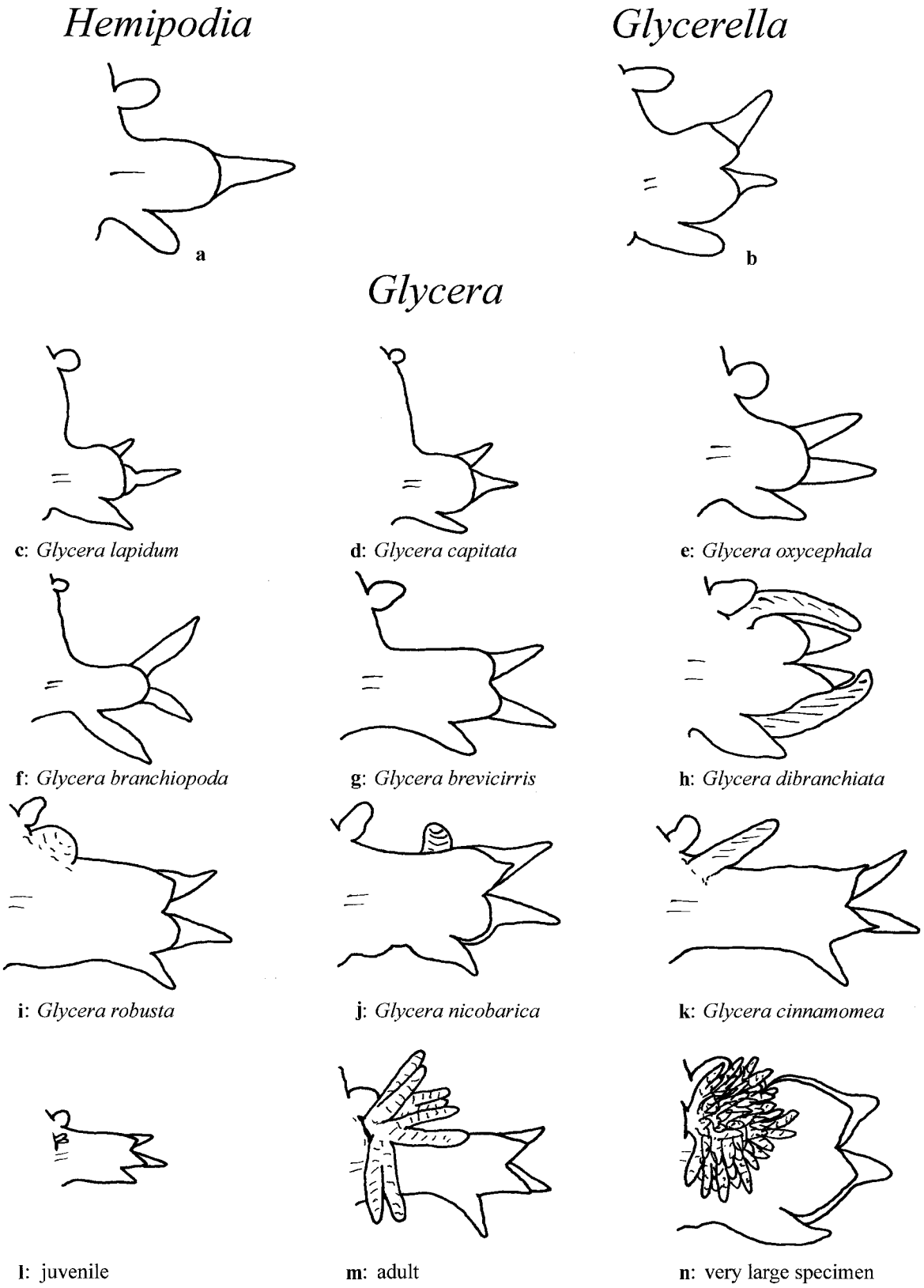

Fig. 9: *Hemipodia*. – a: Parapodium. *Glycerella*. – b: Parapodium. *Glycera*. – c-k: Parapodia of different species. *Glycera americana*. – l-n: Parapodia of different ontogenetic stages. [a-n: posterior view]

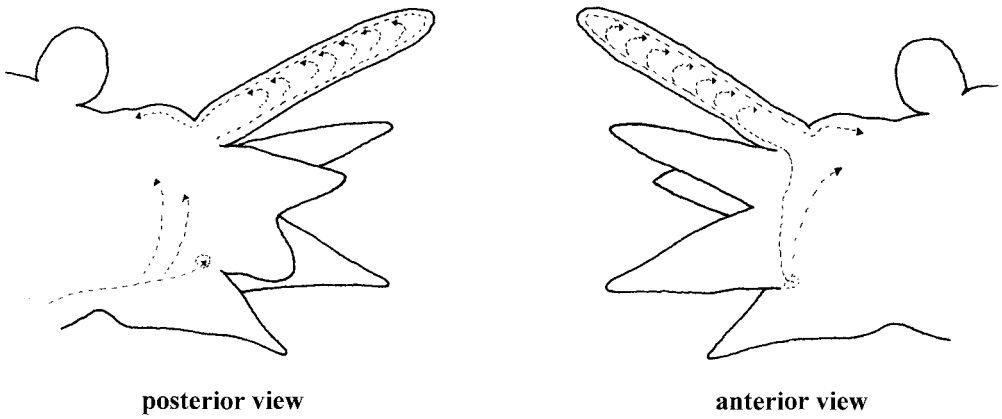

Fig. 10: Circulatory system in the parapodium and branchia of *Glycera tridactyla*.

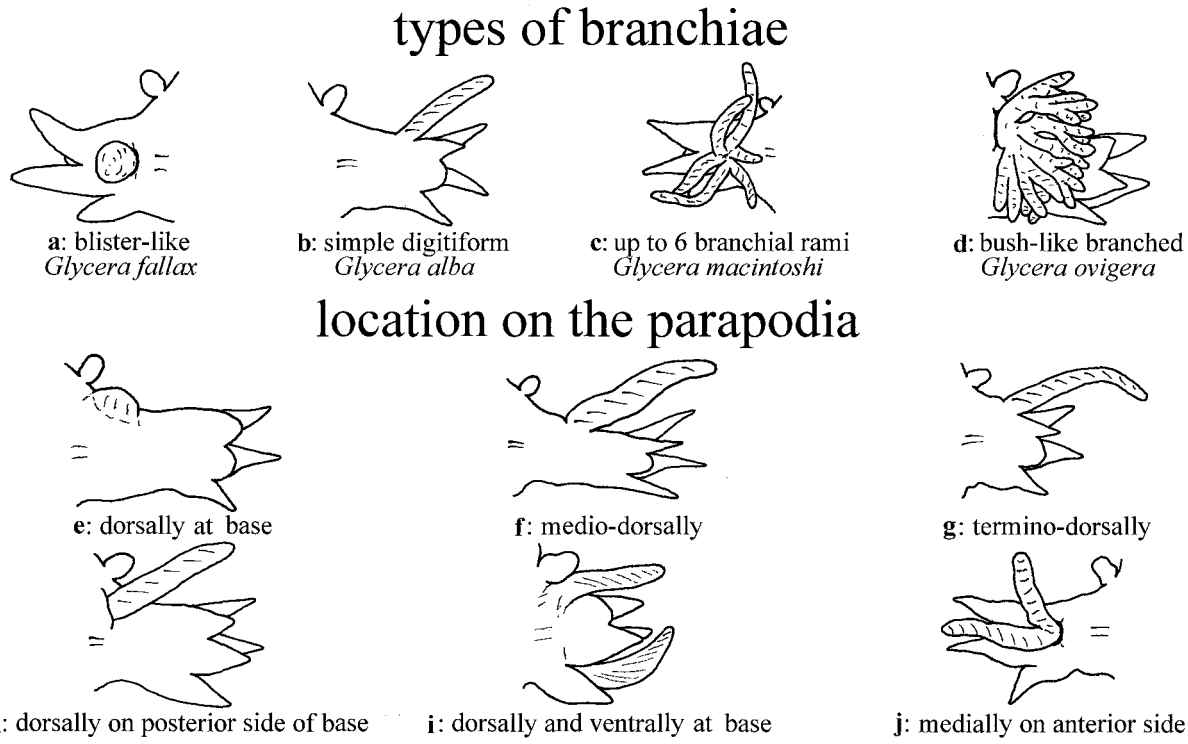

Fig. 11: a-d: Several types of branchiae. e-j: Location on the parapodia. [a, c, j: anterior view; b, d-i: posterior view]

The branchiae are only present in some of the species of *Glycera*. There are several types which can be situated on different parts of the parapodia (figs. 5, 11). The branchiae may be blister-like (fig. 11a), simple digitiform (fig. 11b) or branched with up to six branchial rami (fig. 11c), or bush-like (fig. 11d). They may be situated dorsally at the parapodial base (fig. 11e; e.g. *Glycera robusta*), medio-dorsally on the parapodia (fig. 11f; *Glycera posterobranchia*), termino-dorsally on the parapodia (fig. 11g; e.g. *Glycera tridactyla*), dorsally on the posterior side of the parapodial base (fig. 11h; e.g. *Glycera russa*), dorsally and ventrally at the parapodial base (fig. 11i; *Glycera dibranchiata*) or medially on the anterior side of the parapodia (fig. 11j; e.g. *Glycera unicornis*). In some of the species the branchiae are retractile (e.g. *Glycera fallax*, *Glycera macintoshi*) and may be difficult to locate. They may be absent or not fully developed in juvenile specimens in cases where very large specimens possess well branched branchiae (fig. 9l-n, e.g. *Glycera americana*). In a few cases distorted branchiae with additional rami are present (fig. 6e). The position of the branchiae on the parapodia is generally more important than their structure in taxonomy.

Segmental annulation

The segments are bi- or triannulate. In species with biannulate segments, the parapodia with dorsal and ven-

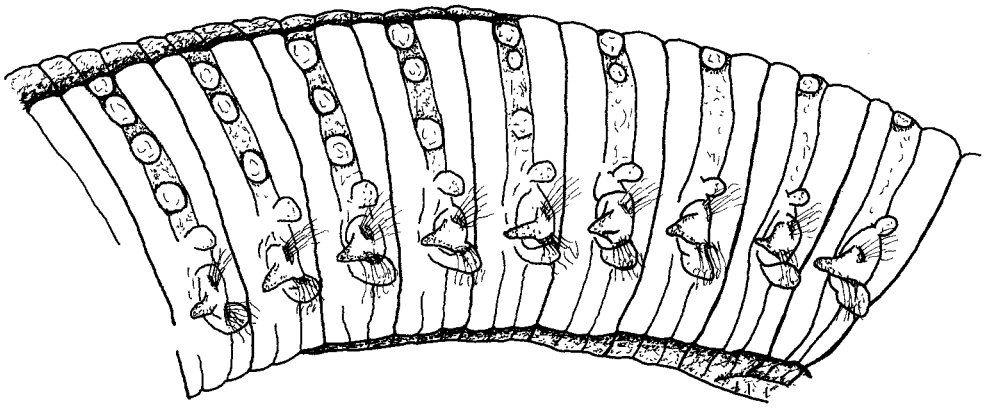

Fig. 12: *Hemipodia pustatula* (SMF 2703). – Segments 31 (left) to 39. [lateral view]

tral cirri are situated on the anterior annulus, and in species with triannulate segments they are on the middle annulus. The annulation is sometimes not easily visible, especially in badly preserved specimens. Occasionally, small specimens of species with biannulate segments seem to be triannulate, especially on the anterior part of the body. The two anterior annuli of specimens with triannulate segments are only partially separated by an indistinct groove which can easily be missed. In juvenile or badly preserved specimens it is also difficult to recognize the tubercles on the dorsal sides which occur in some of the species (fig. 12). The tubercles were first described by FRIEDRICH (1956) on *Hemipodia pustatula*. Usually, up to four more or less distinct tubercles can be found on each side of the dorsum, mainly on anterior segments. The number of tubercles decreases in the following segments, and after their disappearance the segments are more or less distinctly triannulate.

Ailerons

The ailerons (figs. 5, 13) are either rod-like (fig. 13a-b, *Glycerella* and all species of *Hemipodia*) or possess a more complicated structure with outer and inner rami, and sometimes an interramal plate (fig. 13c-k, all species of *Glycera*). The area where the two rami are connected by the interramal plate (when present) is defined as the base. The aileron base of the species of *Glycera* may be slightly arched (fig. 13c, *Glycera oxycephala*), rounded triangular (fig. 13d, e.g. *Glycera macintoshi*), triangular (fig. 13e, e.g. *Glycera nicobarica*), pointed triangular with (fig. 13f, *Glycera lapidum*) or without a slight dent (fig. 13g, e.g. *Glycera capitata*), or deeply incised (fig. 13h, e.g. *Glycera brevicirris*) if the interramal plate is lacking. During ontogeny, first the outer ramus will be hardened followed by the inner ramus and finally the interramal plate, if present (fig. 13i-k). Therefore, in juvenile specimens the interramal plate may be soft and transparent and hence easily overlooked (fig. 13i).

Proboscidial papillae

The proboscidial papillae of glycerids show great differences in their external morphology, but their cellular structure seems to be basically similar (BÖGGEMANN et al. 2000). The papillae appear in a variety of types distinguished by the shape, size and morphology of their posterior sides (fig. 14). The anterior sides of the papillae are always smooth (FIEGE & BÖGGEMANN 1997). Four different forms with specialized structures can be distinguished: papillae with a terminal fingernail structure, digitiform papillae, conical papillae and oval to globular papillae (fig. 14). The 'nail' of the papillae with a terminal fingernail structure is clearly separated from the stalk (fig. 14a-e) and shows some longidutinal ridges (fig. 14a-c, e.g. *Glycera alba*), 4-6 V-shaped terminal ridges (fig. 14d, *Glycera gilbertae*) or no ridges (fig. 14e, *Glycera lamelliformis*). The stalk is defined as long, medium-length or short, depending on whether it is two times longer (fig. 14a, e.g. *Glycera alba*), about as long (fig. 14b, e.g. *Glycera posterobranchia*), or shorter than the nail (fig. 14c-e, e.g. *Glycera macrobranchia*), respectively. Papillae without a terminal fingernail structure show different numbers of more V-shaped (fig. 14f, l, s, e.g. *Glycera pseudorobusta*) or U-shaped ridges (fig. 14g, m-p, t, e.g. *Hemipodia yenourensis*), an undulating ridge (fig. 14h, *Glycera lapidum*), a Y-shaped ridge in combination with 1-3 vertical ridges at the tip (fig. 14q, *Glycera ovigera*), a single terminal U-shaped and an additional longitudinal ridge (fig. 14i, *Glycera benhami*), a straight, median, longitudinal ridge (fig. 14j, r, e.g. *Glycerella magellanica*) or no ridges (fig. 14k, u, e.g. *Glycera sphyrabrancha*).

The proboscis of each species is densely covered with one main type of papillae (fig. 5). Besides these, one or two additional types are present but constitute less than 10% of the total number. These other types are more or less distinctly arranged in longitudinal rows. The proboscidial papillae appear to be one of the most reliable char-

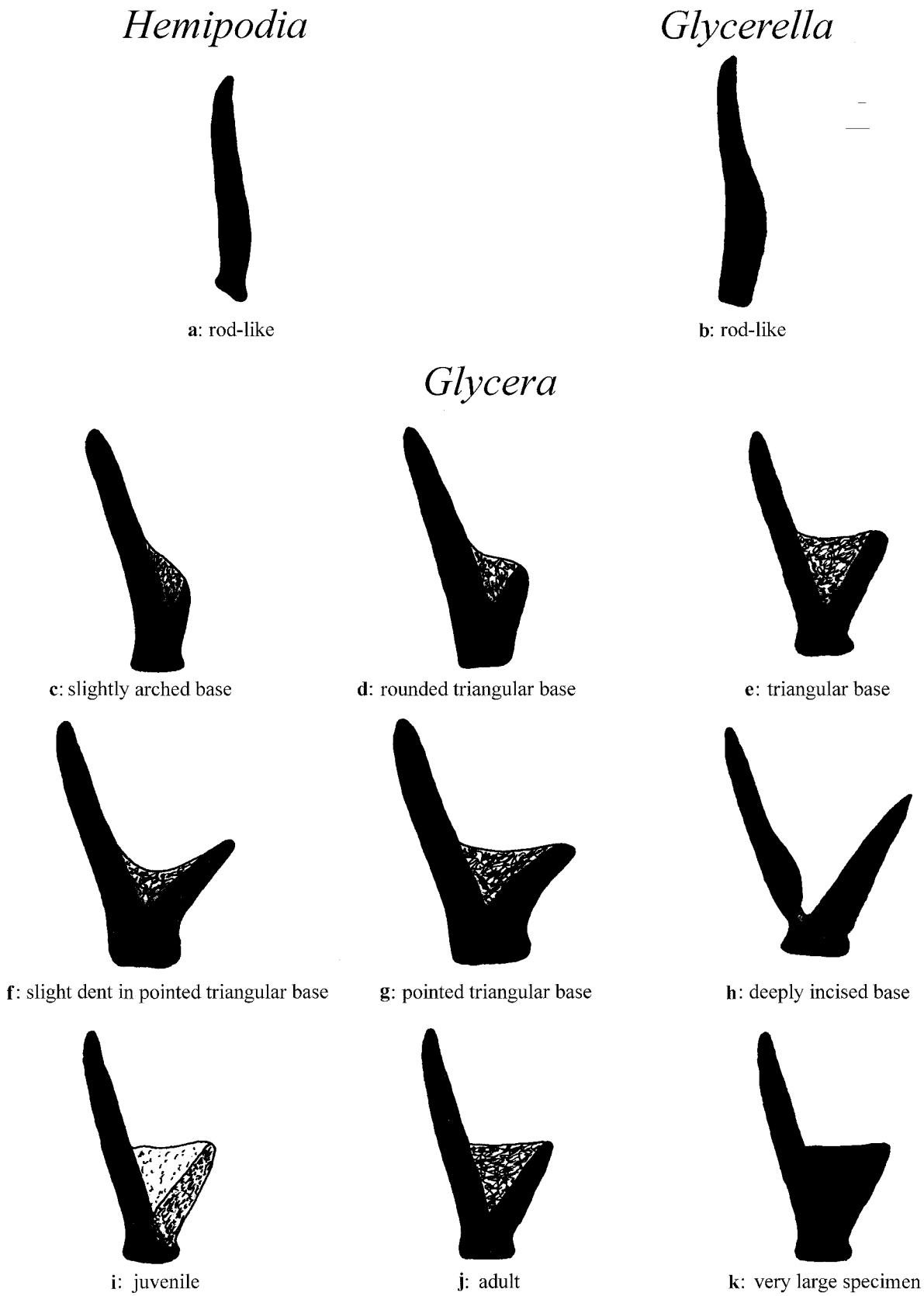

Fig. 13: *Hemipodia*. – a: Aileron. *Glycerella*. – b: Aileron. *Glycera*. – c-h: Ailerons of different species. *Glycera americana*. – i-k: Ailerons of different ontogenetic stages.

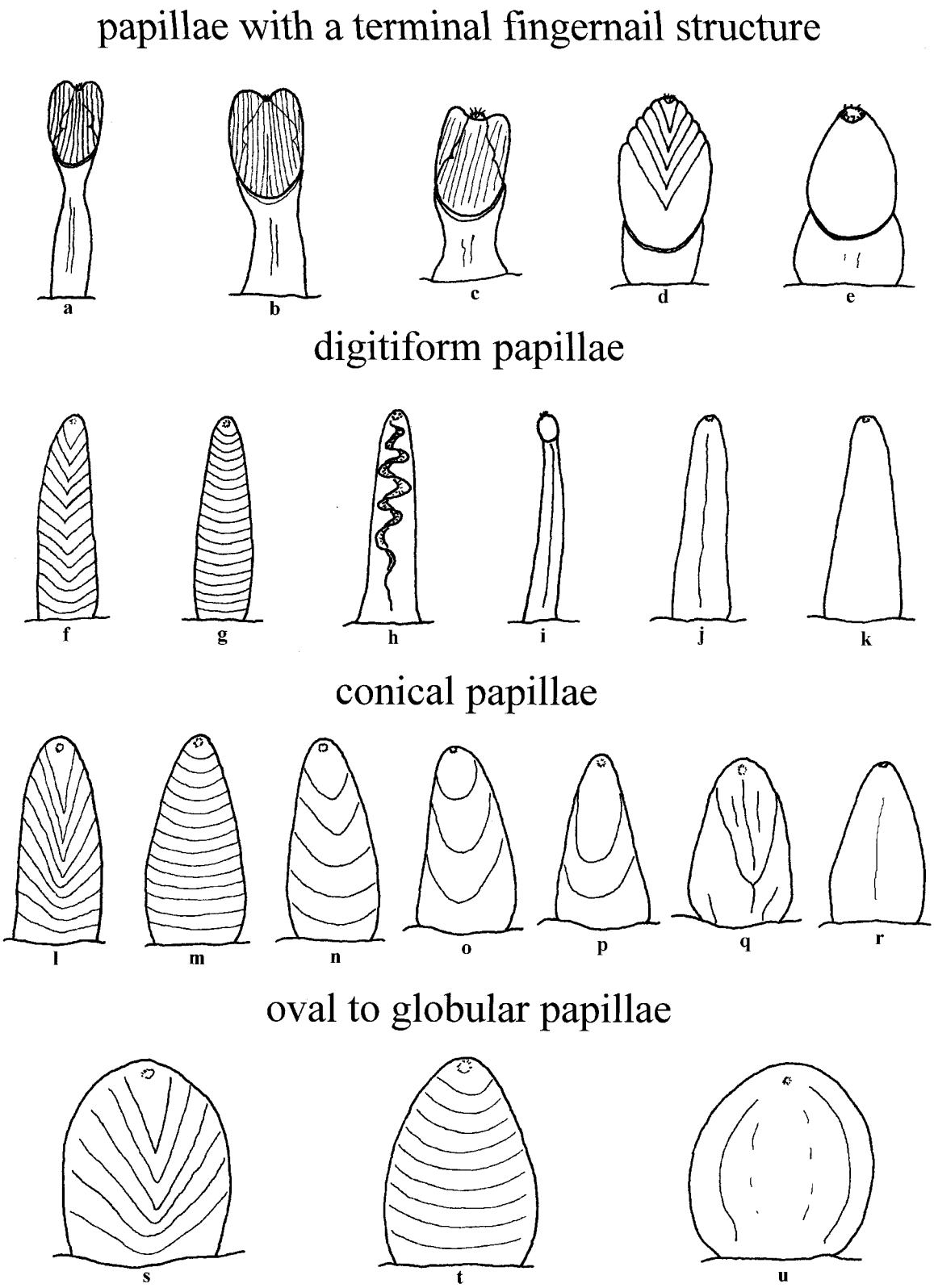

Fig. 14: a-u: Different types of proboscidial papillae and their characteristic appearance on the posterior side.

acters for identification (FIEGE & BÖGGEMANN 1997), although some species have the same combination of types. Exact identification of poorly preserved or small specimens may be difficult, especially if the proboscis is retracted, because in such cases the shape of the papillae and the morphology of their posterior sides may not be well-defined.

Materials and methods

Documentation of the examined material

Observations, drawings and measurements

Observations, drawings and measurements were made using a Leica Wild MZ 8 stereo microscope and a LEITZ Laborlux S compound microscope. Many of the details necessary to identify glycerids, such as the shape and number of pre- and postchaetal lobes, the presence or absence of branchiae and their position on the parapodia, the mode of segmental annulation and the shape of the aileron, can be clearly observed under a stereo microscope. If the proboscis is retracted, dissection is necessary to examine the papillae and ailerons, which is made easier if the proboscis is fully extended. It may therefore be advantageous to preserve newly collected specimens directly in 3 % glutaraldehyde, since this apparently induces proboscidial eversion.

Abbreviations used in the "Material examined" section for each species include: cs – complete specimen, af – anterior fragment, mf – middle fragment, and pf – posterior fragment. This is followed by: length of specimen (in mm); number of chaetigers; width of specimen incl. Parapodia and width excl. parapodia (in mm). Other abbreviations are explained in the "Appendix".

Systematic section

The order in which the species are treated in the taxonomic section correspond to their position in the key.

The synonomy of valid species contains only originally described glycerids. Actually the nomina nuda have no type status, but for the sake of completeness they are noted in quotation marks (" "). The Latin words: "hic", "non" and "partim" mean: "here designated", "not" and "partly".

In the "Additional material" section for each species the specimens are arranged geographically. The division follows the following order: Atlantic Ocean, Indian Ocean, and Pacific Ocean. The oceans are subdivided into smaller regions by the Arctic Circle, Tropic of Cancer, Tropic of Capricorn and Antartic Circle (fig. 15). Within each region the specimens are ordered from north to south and west to east.

Some biological and ecological information from the literature is included in the "Remarks" section of each species (see "Appendix – Additional registrations of Glyceridae from the literature"). This list only includes specimens which are identified unambiguously (without question mark) or with a high degree of probability (with

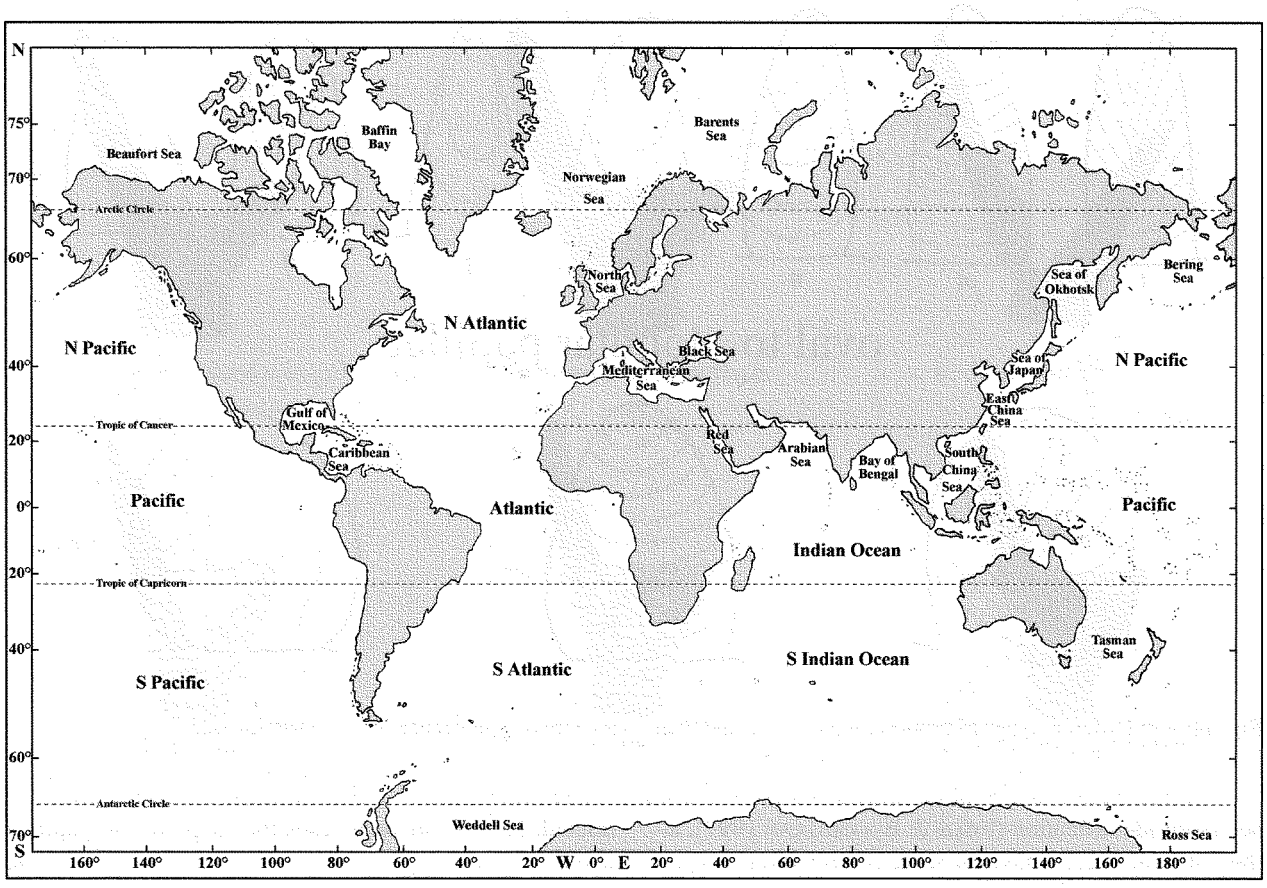

Fig. 15: World chart (mercator projection) showing subdivisions.

question mark) by the descriptions, drawings or examined material.

Specimens without special catalogue numbers, which are used for the drawings or SEM pictures, are marked by superscript numbers ([1-9]).

Distribution charts

For a better survey the world chart is subdivided into the Atlantic, Indian and Pacific Oceans and some smaller regions (fig. 15). The black circles (●) symbolize specimens from the literature (see "Appendix – Additional registrations of Glyceridae from the literature"), the black squares (■) the examined specimens and the triangles with numbers the type material. If the locality details are inaccurate (e.g. Greenland), the symbol is placed on land. A few of the *Glycera capitata* specimens, marked with an asterisk (*), are not represented on the chart, since their localities are found outside of the illustrated area.

SEM and X-ray microanalysis

For SEM observations proboscidial fragments were dehydrated by a graded ethanol series, critical-point dried using CO_2, mounted on aluminium stubs and subsequently coated with gold-palladium. Observations were performed with a CamScan CS 24 SEM. The digital SEM pictures were designed with the software programme Orion 4.22 and the plates arranged graphically using Adobe Photoshop 3.0.

The jaws of *Glycera alba* (North Sea, SMF 9611), *G. americana* (U.S.A., Massachusetts, SMF 9581 + 9584), *G. branchiopoda* (U.S.A., Oregon, SMF 9389), *G. brevicirris* (Panama, Playa Langosta, SMF 9422), *G. capitata* (Iceland, SMF 9300), *G. celtica* (U.S.A., Georgia, Sapelo, SMF 9440 and North Sea, SMF 9444), *G. dibranchiata* (U.S.A., Massachusetts, SMF 9453 and Georgia, Sapelo, SMF 9464), *G. pseudorobusta* (U.S.A., Georgia, Sapelo, SMF 9451), *G. tesselata* (U.S.A., Oregon, SMF 9418), *G. tridactyla* (France, Bretagne, Pemprat, SMF 9656; Roscoff, SMF 9659 and St. Michel-en-Grève, SMF 9653), *G. unicornis* (Mediterranean Sea, France, Banyuls-sur-Mer, SMF 9533; Gulf of Lion, SMF 9517 and Mediterranean Sea, SMF 9544), the chevrons of *Goniada maculata* ÖRSTED 1843a (North Sea, SMF 5367) and the paragnaths of *Nephtys hombergii* SAVIGNY 1818 (North Sea, SMF 5324) were used for X-ray microanalysis.

The dried jaws, chevrons and paragnaths were mounted on aluminium stubs and subsequently coated with coal. The X-ray analysis was carried out on a CamScan CS 24 SEM fitted with a EDAX PV9800 energym dispersive X-ray microanalyser at 20 kV. The element distribution pictures were designed with the software programme Orion 4.22 and the plates arranged graphically using Adobe Photoshop 3.0.

Cladistic analysis

Parsimony analyses and character state reconstructions were performed with different PC and Macintosh computers. The matrix was entered in TREE GARDENER 2.2.1. [© T.C. RAMOS] and analysed with heuristic search algorithms in Hennig86 1.5 [© J.S. FARRIS] and PAUP 3.1.1 and 4.0 [© D. SWOFFORD].

List of original described glycerids

(Species considered to be valid are marked by **bold type**. Nomina nuda are noted in quotation marks).

species	genus	original description	locus typicus	type	status
abranchiata	*Glycera*	TREADWELL 1901: 200, fig. 49	Arroyo, Porto Rico	syntypes: USNM 15998	= *Glycera brevicirris*
africana	***Glycera***	ARWIDSSON 1899: 21; pl. 1, figs. 10-12	no locality details; AUGENER (1918): Bugama, Nigeria	syntypes: HZM V-1743	***Glycera africana***
alba	*Nereis*	O.F. MÜLLER 1776: 217	no locality details; O.F. MÜLLER (1784): Norvegiae	presumed lost	***Glycera alba***
alba	*Glycera*	RATHKE 1843: 173; pl. 9, fig. 9	Molde, Norwegen	lost	= *Glycera alba* (O.F. MÜLLER 1776)
alba var. *adspersa*	*Glycera*	FAUVEL 1939: 342	Recif de Caûda, Poulo Condore [Vietnam]	holotype: ?, UCO Q. 58' (slide with parapodia)	nomen dubium
alba var. *cochinensis*	*Glycera*	SOUTHERN 1921: 627; pl. 27, fig. 17a-j; textfig. 16a-e	Cochin Backwater, near Ernakulam [India]	? ZSI	= ? *Glycera tridactyla*

species	genus	original description	locus typicus	type	status
alba ***macrobranchia***	***Glycera***	MOORE 1911: 301	Beaver Shoal, San Diego Bay, California [U.S.A.]	holotype: USNM 16848	***Glycera macrobranchia***
albicans	*Glycera*	QUATREFAGES 1850: 358; pl. 9, fig. 4	no locality details; QUATREFAGES (1866): Boulogne [Boulogne-sur-Mer, France]	lost	nomen dubium
amboinensis	*Glycera*	MCINTOSH 1885: 345; pl. 42, figs. 6-7	near Amboina [Indonesia]	holotype: BMNH 1885.12.1.240	= *Glycera nicobarica*
americana	***Glycera***	LEIDY 1855: 147; pl. 11, figs. 49-50	Point Judith, Atlantic City, and Great Egg Harbor [U.S.A.]	presumed lost	***Glycera americana***
armatus	*Hemipodus*	HARTMAN 1950: 83; pl. 12, figs. 1-5	Petatlan Bay, western Mexico	holotype: LACM-AHF Poly 767	***Hemipodia armata***
asymmetrica	*Glycera*	DAY 1973b: 47, fig. 6d-g	Beaufort [Nord-Carolina, U.S.A.]	holotype: USNM 43148 paratypes: USNM 43149	= *Glycera sphyrabrancha*
atlantica	*Glycerella*	WESENBERG-LUND 1950: 24; pl. 5, fig. 22; pl. 6, fig. 28; map 31	South of Iceland: 62°06'N. 19°00'W.	syntypes: ZMUC-POL-394	= *Glycerella magellanica*
australiensis	*Hemipodus*	KNOX & CAMERON 1971: 30, figs. 17-19	Beau Beach, Port Phillip [Australia]	holotype: MV F 41746 paratype: MV F 41747	= *Hemipodia yenourensis*
†***balticus***	†*Paranereites*	EISENACK 1939: 169, fig. 13a-b	Baltikum aus Kelloway-Geschiebe, Jurassic	holotype (only jaws): Königsberg Typus: J Nr. 41	†***Glycera baltica*** [fossil]
basibranchia	*Glycera*	CHAMBERLIN 1919a: 14	Laguna Beach, California [U.S.A.]	presumed lost	= ? *Glycera pacifica*
bassensis	***Glycera***	BÖGGEMANN & FIEGE 2001: 30; figs. 1, 8a-b, 10	western Bass Strait, 39°18.8'S 143°38'E, Victoria, Australia	holotype: MV F 80203 paratypes: MV F 80207, SMF 9118	***Glycera bassensis***
benhami	***Glycera***	BÖGGEMANN & FIEGE 2001: 31; figs. 2, 8c-d, 10	Cook Strait, 41°07.4'S 174°39.5'E, New Zealand	holotype: NZOI A441 paratypes: NZOI U285, SMF 9120	***Glycera benhami***
"*Bianconi*"	"*Glyceres*"	"PETERS in BIANCONI 1862: 477" [nomen nudum]	no locality details; HARTWICH (1993): "Inhambane" [Moçambique]	"holotype": ZMB 97	= *Glycera macintoshi*
biannulatus	*Hemipodus*	HARTMANN-SCHRÖDER 1960a: 15, figs. 29-34	La Herradura bei Lima [Peru]	holotype: HZM P-15266 paratypes: HZM P-15267	= *Hemipodia simplex*
borealis	*Hemipodia*	JOHNSON 1901: 411; pl. 10, figs. 104, 104a	Puget Sound [Washington, U.S.A.]	presumed lost	= ? *Hemipodia simplex*
branchialis	*Glycera*	QUATREFAGES 1866: 182	Bréhat [France]	holotype: MNHN A120	= *Glycera tridactyla*
branchiopoda	***Glycera***	MOORE 1911: 302; pl. 20, figs. 155-156; pl. 21, figs. 157-159	Station 4574, off Cape Colnett, Lower California, Lat. 30°35'N., Long. 117°23'W. [Mexico]	holotype: USNM 16847 paratype: ANSP 3077	***Glycera branchiopoda***

species	genus	original description	locus typicus	type	status
brevicirris	***Glycera***	GRUBE 1870a: 61	Fundort nicht genau bekannt; Indischer Ocean ?	syntype: ZMB Q. 4304	***Glycera brevicirris***
cæca	*Pseudo-lacydonia*	RULLIER 1964: 151, fig. 8a-k	St. 75, Lat. 16°04'20"N, Long. 22°08'10"W, Cap Vert [Cape Verde]	holotype: MNHN A383	= *Glycerella magellanica*
calbucoensis	*Glycera*	HARTMANN-SCHRÖDER 1962a: 111, figs. 104-108	Puerto Calbuco bei Puerto Montt [Chile]	holotype: HZM P-14316	nomen dubium
californiensis	*Hemipodus*	HARTMAN 1938: 93, figs. 2-7	Morro Bay, California [U.S.A.]	1. holotype: USNM 20361 2. paratypes: LACM-AHF Poly 768	1. ***Hemipodia californiensis*** 2a. ***Hemipodia californiensis*** 2b. = *Hemipodia simplex*
canadensis	*Hemipodia*	TREADWELL 1937b: 348, figs. 1-3	43°10'N., 63°00'W., Nova Scotia [Canada]	presumed lost	= *Glycera capitata*
capitata	***Glycera***	ØRSTED 1842: 123	Grønland; ÖRSTED (1843): fra flere af Grönlands Havne [from several harbours in Greenland]	? syntypes: ZMB Q. 4306	***Glycera capitata***
capitata abyssicola	*Glycera*	AVERINCEV 1972: 138; pl. 16, figs. 7-10; pl. 17, figs. 4-6	R/V OB St. 252, 271, 274 [Agulhas Basin]	syntypes: ZISP 1/50398, 2/50399	= ? *Glycera capitata*
capitata antarctica	*Glycera*	AVERINCEV 1972: 136; pl. 16, figs. 1-6, 11, 12	R/V AKADEMIK KNIPOVITSCH St. 212, 51°29.3'S 57°16.5'W [Falkland Islands]	holotype: ZISP 1/15776 paratypes: ZISP several stations	= ? *Glycera capitata*
capitata var. *benguellana*	*Glycera*	AUGENER 1931: 303, fig. 9a-b	28°44'S 13°30'O, Benguella-Strömung westlich von Südafrika	presumed lost	= ? *Glycera oxycephala*
capitatus	*Lumbricus*	O. FABRICIUS 1780: 279	Groenl. Pulluteriak [Greenland]	presumed lost	= ? *Capitella capitata*
carnea	*Glycera*	BLANCHARD 1849: 28; pl. 2, fig. 1a-b	Chiloe [Chile]	lost	nomen dubium
celtica	***Glycera***	O'CONNOR 1987: 179, fig. 10a-e	Celtic Sea: 49°27·00'N, 10°33·8'W	holotype: NMI 83.1985	***Glycera celtica***
chilensis	*Glycera*	ARWIDSSON 1899: 24; pl. 1, figs. 20-21; pl. 4, fig. 56	Talcahuano, Chile (ungefähr 36°40' s. Br.)	holotype: UUZM 316	= *Glycera americana*
chirori	*Glycera*	IZUKA 1912: 245; pl. 2, fig. 8; pl. 24, fig. 13	Kasaoka in Prov. Bittyu [Japan]	syntypes: UMUT	= *Glycera nicobarica*
ciliatus	*Hemipodus*	HARTMANN-SCHRÖDER 1959: 150, figs. 128-131	El Zapote [El Salvador]	holotype: HZM P-14324 paratypes: HZM P-14325	= *Hemipodia pustatula*
cinnamomea	***Glycera***	GRUBE 1874: 327	Ceylon	holotype: BMNH 1974.10.2.9	***Glycera cinnamomea***
cirrata	*Glycera*	GRUBE 1857: 176	1. Rio Janeiro [Brazil] 2. St. Croix [Caribbean Sea]	syntypes: 1. lost 2. ZMUC-POL-392	1. = *Glycera americana* 2. = *Glycera brevicirris*
convoluta	*Glycera*	KEFERSTEIN 1862: 106; pl. 9, figs. 28-29	Neapel [Italy]	lost	= ? *Glycera tridactyla*
convoluta var. *capensis*	*Glycera*	MONRO 1933a: 499, fig. 12	Seaforth, South Africa	holotype: BMNH 1932.11.24.39	= *Glycera cinnamomea*

species	genus	original description	locus typicus	type	status
convoluta Forma *sevastopolica*	*Glycera*	CZERNIAVSKY 1881: 381 [= *Rhynchobolus convolutus* sensu BOBRETZKY 1870: 215]	Sin. Sevastopol. [harbour of Sevastopol, Black Sea]	presumed lost	= ? *Glycera tridactyla*
convoluta Forma *suchumica*	*Glycera*	CZERNIAVSKY 1881: 381	Sin. Suchum. [harbour of Suchumi, Black Sea]	presumed lost	= ? *Glycera tridactyla*
convoluta var. *uncinata*	*Glycera*	RIOJA 1918: 85, fig. 20a-b	Colindres, Santander, Gijón [Spain]	syntypes: MNCN 16.01/282	= *Glycera tridactyla*
corrugata	*Glycera*	BAIRD 1863: 109	Esquimalt Harbour, Vancouver Island [Canada]	presumed lost	nomen dubium
danica	*Glycera*	QUATREFAGES 1866: 187 [= *Glycera alba* sensu ÖRSTED 1843b: 33; pl. 1, fig. 24; pl. 7, figs. 103, 105, 110]	no locality details; ÖRSTED (1843b): prope Hellebæk [Denmark]	presumed lost	= *Glycera alba*
dayi	*Glycera*	O'CONNOR 1987: 181, fig. 11a-e	Off Beaufort, North Carolina [U.S.A.]	holotype: USNM 51110	= ? *Glycera celtica*
decipiens	*Glycera*	MARENZELLER 1879: 140; pl. 6, figs. 3, 3a	Bucht von Miya, Südjapan	syntypes: NHMW 981, 983, HZM V-1090	= *Glycera nicobarica*
decorata	*Glycera*	QUATREFAGES 1866: 181	Bréhat [France]	syntypes: MNHN A119	= *Glycera fallax*
dentribranchia	*Glycera*	LEE 1984: 14; pl. 1a-c; fig. 1	Collection: St. 1916, Korea, Yellow Sea	? KORDI	= ? *Glycera robusta*
derbyensis	*Glycera*	HARTMANN-SCHRÖDER 1979: 123, figs. 248-250	Derby: Steinaufschüttung an der Anlegerbrücke, Australien	holotype: HZM P-15487 paratypes: HZM P-15488, WAM 14-79	= *Glycera macintoshi*
dibranchiata	***Glycera***	EHLERS 1868: 670; pl. 24, figs. 1, 3-8, 10-28	Massachusets-Bay and New-Jersey [U.S.A.]	syntypes: MCZ 167	***Glycera dibranchiata***
digitifera	*Hemipodus*	KNOX 1960a: 134, figs. 220-226	44°00'S., 176°21'W, Hanson Bay, Chatham Islands [New Zealand]	holotype: CM AQ3465	= *Hemipodia simplex*
diodon	*Glycera*	SCHMARDA 1861: 94, textfigs. a, k	Chile an der Playa ancha bei Valparaiso	syntypes: NHMW 984	= *Hemipodia simplex*
"*doreæ*"	"*Nereis*"	"MCINTOSH 1910: 478" [nomen nudum]			= ? *Glycera lapidum*
dubia	*Nereis*	BLAINVILLE 1825: 451; pl. 19, figs. 1, 1a, 1b [from BLAINVILLE 1816-1830]	no locality details	presumed lost	nomen dubium
edentata	*Glycera*	HANSEN 1882: 17; pl. 5, figs. 16-18	no locality details; AUGENER (1934): Bai von Rio de Janeiro [Brazil]	holotype: RMNH 1399	= *Glycera americana*
Edwardsi	*Glycera*	GRAVIER 1902: pl. 10, figs. 160-162	no locality details; GRAVIER (1904): Djibouti	syntypes: MNHN A120	= *Glycera brevicirris*
ehlersi	*Glycera*	ARWIDSSON 1899: 19	Nordsee	holotype: presumed lost paratype: SSM 983	= *Glycera oxycephala*
ellesmerensis	*Hemipodus*	KNOX 1960b: 229, figs. 21-27	Lake Ellesmere, Canterbury, New Zealand	? NZOI	nomen dubium

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"*embranchiata*"	"*Glycera*"	"KRISHNAMOORTHI 1963: 97" [nomen nudum]		?	nomen dubium
"*enigmatica*"	"*Glycera*"	"AMOUREUX 1971: 153" [nomen nudum]	"cote d'Arcachon, St. 39" [France]	presumed lost	nomen dubium
epipolasis	*Telake*	CHAMBERLIN 1919b: 346; pl. 63, figs. 4-8; pl. 64, fig. 1	Gilbert Islands: off Arhno reef	holotype: USNM 19717	= *Glycera brevicirris*
exigua	*Glycera*	CHAMBERLIN 1919a: 13	Balboa [Laguna Beach, California, U.S.A.]	holotype: MCZ 2158	= *Glycera macrobranchia*
fallax	***Glycera***	QUATREFAGES 1850: 358	no locality details; QUATREFAGES (1866): St. Vaast [France]	lost	***Glycera fallax***
filigera	*Nereis*	BLAINVILLE 1825: 453	côtes de l'Amérique	presumed lost	= ? Cirratulidae
folliculosa	*Glycera*	EHLERS 1868: 658	Neapel [Italy]	holotype: HZM PE-605	= *Glycera fallax*
fundicola	*Glycera*	CHAMBERLIN 1919b: 352	Peru: 111 miles N.W. of Aguja Point. Sta. 4651 (lat. 5°42'S., long. 83°W.)	holotype: USNM 19361	= *Glycera tesselata*
fusiformis	*Glycera*	FISCHLI 1900: 113; pl. 4, figs. 11-14; pl. 6, figs. 43-44; pl. 7, fig. 65; pl. 8, figs. 82-84	Ternate, Molukken	presumed lost	= ? *Glycera brevicirris*
gigantea	*Glycera*	QUATREFAGES 1866: 183	Bréhat [France]	syntypes: MNHN A121	= *Glycera fallax*
gilbertae	***Glycera***	BÖGGEMANN & FIEGE 2001: 34; figs. 3, 8e-f, 10	off Port Isabel, 26°10'N 96°54'W, Texas, U.S.A.	holotype: USNM 89789 paratypes: USNM 89786, SMF 9600	***Glycera gilbertae***
†***glauco-psammensis***	***Glycera***	CHARLETTA & BOYER 1974: 360; pl. 4, figs. 2-3	southern New Jersey from Marshalltown Formation, Cretaceous	holotype (only jaws): USNM 189886	†***Glycera glaucopsammensis*** [fossil]
Goësi	*Glycera*	MALMGREN 1867: 184; pl. 15, fig. 81a, c-d, f	Bahusiam et Väderöarne [Bohuslän and Väder Island, Sweden]	syntypes: SSM Type 2464, SSM 6232, 6233	= *Glycera unicornis*
guatemalensis	***Glycera***	BÖGGEMANN & FIEGE 2001: 35; figs. 4, 8g-h, 10	San Jose, Guatemala	holotype: USNM 35980 paratype: SMF 9392	***Glycera guatemalensis***
guinensis	*Glycera*	AUGENER 1918: 389; pl. 5, figs. 128-130, textfig. 48	Fernando Poo [Equatorial Guinea], Westafrika (Senegal, Gorée; Liberia, Seß Town; Elfenbeinküste, Wappu; Nigeria, Lagos; Französ.-Kongo, Nyanga-Fluß)	syntypes: HZM V-1113, 1116, 1105, 1104, 1119, 1117	= *Glycera unicornis*
hasidatensis	*Glycera*	IZUKA 1912: 246; pl. 24, figs. 14-15	West side of Hashidaté in the Gulf of Miyazu, Prov. Tango [Japan]	1. lectotype: UMUT 2. paralectotypes: UMUT	1. = *Glycera macintoshi* 2a. = *Glycera nicobarica* 2b. = *Glycera onomichiensis*
heteropapillatus	*Hemipodus*	HARTMANN-SCHRÖDER 1962a: 111, figs. 109-112	Isla Melchor, Südchile	holotype: HZM P-14326 paratypes: HZM P-15335	= *Hemipodia simplex*

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heteropoda	*Glycera*	HARTMANN-SCHRÖDER 1962a: 110, figs. 102-103	Penco [Chile]	holotype: HZM P-15330	= *Glycera americana*
heterosetosus	*Hemipodus*	CANTONE 1990: 58, fig. 3a-g	Rio Pipo (Ushuaia), Argentina	holo- and paratype: UC	= *Hemipodia simplex*
hirsuta	*Nereis* (*Nephtys*)	DALYELL 1853: 145; pl. 21, figs. 1-3	Zetland [Shetland Islands]	presumed lost	= ? *Nephtys*
incerta	*Glycera*	HANSEN 1882: 17; pl. 5, figs. 19-22	no locality details; AUGENER (1934): Bai von Rio de Janeiro [Brazil]	holotype: RMNH 1400	= *Glycera americana*
jucunda	*Glycera*	KINBERG 1865: 245	Portus urbis Rio Janeiro [harbour of Rio de Janeiro, Brazil]	syntypes: SSM 666, 667	= *Glycera americana*
kerguelensis	*Glycera*	MCINTOSH 1885: 344; pl. 35A, figs. 3-4	Station 149H, off Christmas Harbour [?], Kerguelen	holotype (only mf): BMNH 1885.12.1.239	= *Glycera capitata*
knoxi	***Glycera***	KIRKEGAARD 1995: 26, fig. 13a-d	W of New Zealand, 42°10'S 170°10'E	holotype: ZMUC-POL-34	***Glycera knoxi***
Kœhleri	*Glycera*	ROULE 1896: 451; pl. 20, figs. 6-7; pl. 21, fig. 8; pl. 24, fig. 23; pl. 25, fig. 27	Station 5: Long. E. [W] 6°15'. — Lat. N. 45°47', Golfe de Gascogne [France]	presumed lost	nomen dubium
Kraussii	*Glycera*	STIMPSON 1856: 392	Cape of Good Hope, at Simon's Bay [South Africa]	presumed lost	nomen dubium
lævis	*Glycera*	KINBERG 1865: 245	Mare atlanticum long. occid. 40°55', lat. austr. 22°30' [Brazil]	syntypes: SSM 662-665	= *Glycera americana*
lamelliformis	***Glycera***	MCINTOSH 1885: 347; pl. 42, figs. 9-10; pl. 22A, fig. 11	Station 167A, Queen Charlotte Sound, Cook Strait, New Zealand	1. lectotype: BMNH 1885.12.1.242 2. paralectotype: BMNH 1885.12.1.242a	1. ***Glycera lamelliformis*** 2. = *Glycera russa*
lamellipodia	*Glycera*	KNOX 1960b: 225, figs. 8-15	Lyttelton Harbour, New Zealand	? NZOI	= *Glycera lamelliformis*
Lancadivae	*Glycera*	SCHMARDA 1861: 95; textfigs. a-c, k	Indischer Ozean, Ostküste von Ceylon	presumed lost	nomen dubium
lapidum	***Glycera***	QUATREFAGES 1866: 187 [= *Glycera alba* sensu JOHNSTON 1845: 147; pl. 9, figs. 1-10]	no locality details; JOHNSTON (1845): Berwick Bay [England]	syntypes: BMNH	***Glycera lapidum***
longipapillatus	*Hemipodus*	HARTMANN-SCHRÖDER 1965: 150, figs. 118-121	Bahia San Vicente vor der Mündung der Lenga, Chile	holotype: HZM P-14327 paratypes: HZM P-14328	= *Hemipodia pustatula*
"*longipes*"	"*Glycera*"	"M. SARS in ARWIDSSON 1899: 9" [nomen nudum]		?	= ? *Glycera capitata*
longipinnis	*Glycera*	GRUBE 1878: 182; pl. 8, fig. 9	Aibuhit, Philippinen [Palau Islands]	holotype: MPUW 286	= *Glycera sphyrabrancha*
longissima	*Glycera*	ARWIDSSON 1899: 23; pl. 1, figs. 15-19	Melinca, Guaytecas (oder Chonos) -Inseln (44° s. Br.), Westküste Patagoniens [Chile]	holotype: UUZM 314	= *Glycera americana*
Mac Intoshi	***Glycera***	GRUBE 1877: 50	Chefóo, China	syntypes: MPUW 287	***Glycera macintoshi***
macrorhiza	*Glycera*	SCHMARDA 1861: 94, textfigs. a-c	Chile bei Viña del mar	presumed lost	= ? *Hemipodia simplex*

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madagascariensis	***Glycera***	BÖGGEMANN & FIEGE 2001: 36; figs. 5, 9a-b, 10	13°01.00'S 48°37.00'E, Baie des Ambaro, Madagascar	holotype: SMF 9468 paratype: SMF 9469	***Glycera madagascariensis***
magellanicus	*Hemipodus* (?)	MCINTOSH 1885: 349; pl. 42, figs. 11-15; pl. 22A, figs. 12-15; pl. 35A; figs. 5, 7	Strait of Magellan [Chile]	syntypes: BMNH 1885.12.1.244 and 245; BMNH 1921.5.1.2242/3; ZMUC-POL-395	***Glycerella magellanica***
manorae	*Glycera*	FAUVEL 1932: 130; pl. 5, figs. 9-17	Manora Shoal, Karachi [Pakistan]	holotype: ?ZSI; UCO R/13, R/13' (slides with fragments)	= *Glycera cinnamomea*
Martensii	*Glycera*	GRUBE 1870a: 60	Laventuka [Indonesia, Flores Island, Larantuka]	holotype: ZMB Verm. 3114 [dried], ZMB Q. 4323 partim (only parts)	= *Glycera brevicirris*
Mauritiana	*Glycera*	GRUBE 1870a: 61	Mauritius	holotype: MPUW 288	= ? *Glycera unicornis*
Meckelii	*Glycera*	AUDOUIN & MILNE EDWARDS 1833: 263	Vendée [France]	lost	= *Glycera unicornis*
Mesnili	*Glycera*	SAINT-JOSEPH 1898: 339; pl. 19, figs. 146-148; pl. 20, figs. 149-157	Croisic près de l'Estacade et à Pen-bron [France]	presumed lost	= *Glycera unicornis*
mexicanus	*Hemipodus*	CHAMBERLIN 1919b: 349; pl. 63, figs. 2-3	Gulf of California: Sta. 3437 (lat. 27°39'40"N., long. 111°0'30"W.)	holotype: USNM 19372	= *Glycera branchiopoda*
microdonta	*Glycera*	SCHMARDA 1861: 95			HARTMAN (1959): lapsus calami for *Glycera micrognatha*
micrognatha	*Glycera*	SCHMARDA 1861: 93, textfigs. a-c	Chile bei Valparaiso	syntypes: NHMW 988	= *Hemipodia simplex*
mimica	*Glycera*	HARTMAN 1965: 97, pl. 15a-e	R/V ATLANTIS St. G1, New England, 39°42'N 70°39'W	holotype: LACM-AHF Poly 771 paratypes: LACM-AHF Poly 772	= *Glycera capitata*
minutus	*Rhynchobolus*	BOBRETZKY 1870: 212; pl. 9, figs. 13-17	no locality details; CZERNIAVSKY (1881): Sin. Sevastopol. [harbour of Sevastopol, Black Sea]	presumed lost	= ? *Glycera alba*
minuta Forma *sevastopolica*	*Glycera*	CZERNIAVSKY 1881: 383 [= *R. minutus* BOBRETZKY 1870: 212]	Sin. Sevastopol. [harbour of Sevastopol, Black Sea]	presumed lost	= ? *Glycera alba*
minuta Forma *suchumica*	*Glycera*	CZERNIAVSKY 1881: 382	Sin. Suchum. [harbour of Suchumi, Black Sea]	presumed lost	= ? *Glycera alba*
misakiensis	*Glycera*	IZUKA 1912: 242; pl. 24, figs. 7-9	Koajiro, Misaki in Prov. Sagami [Japan]	presumed lost	= *Glycera pacifica*
mitis	*Glycera*	JOHNSTON 1865: 185	Scotland	? holotype: BMNH	= ? *Glycera fallax*

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monodon	*Glycera*	SCHMARDA 1861: 94, textfig. k	Chile beiViña del mar	syntypes: NHMW 989	= *Hemipodia simplex*
Mulleri	*Glycera*	QUATREFAGES 1866: 172	Groënland	syntypes: MNHN A117	1. = *Glycera capitata* 2. = *Glycera unicornis*
nana	*Glycera*	JOHNSON 1901: 411; pl. 10, figs. 103; 103a	Port Orchard, Puget Sound [Washington, U.S.A.]	syntypes: MCZ 1878, LACM-AHF Poly 1851	= *Glycera capitata*
natalensis	***Glycera***	DAY 1957: 86, fig. 5k-o	Durban [South Africa]	holotype: BMNH 1961.16.31	***Glycera natalensis***
nicobarica	***Glycera***	GRUBE 1868: 24; pl. 3, figs. 1, 1a-b	no locality details; GRUBE (1870a): Nicobaren	holotype: NHMW 990	***Glycera nicobarica***
nigripes	*Glycera*	JOHNSTON 1865: 188	Scotland	1. lectotype: BMNH 2. paralectotypes: BMNH	1. = *Glycera unicornis* 2a. = *Glycera alba* 2b. = *Glycera lapidum* 2c. = *Glycera unicornis*
olivieri	*Hemipodus*	ORENSANZ & GIANUCA 1974: 11; figs. 5, 8-9	Praias da Província de Buenos Aires, Argentina, campanha "almeja amarilla" St. 25	holotype: MACNBR 34193 paratypes: BMNH 1999.1004-1006, MACNBR 34194, SMF 9178, USNM 186551	= *Hemipodia californiensis*
onomichiensis	***Glycera***	IZUKA 1912: 244; pl. 24, figs. 10-12	Onomichi in Prov. Bingo, Misaki, Gulf of Kagoshima in Prov. Satsuma [Japan]	syntypes: UMUT	***Glycera onomichiensis***
opisthobranchiata	*Glycera*	MARENZELLER 1879: 139; pl. 6, fig. 2	Südjapan	syntypes: NHMW 991	= *Glycera pacifica*
orientalis	*Glycera*	BUZHINSKAJA 1992: 6, figs. 1-16	R/V TOPOROK St. 94, off South Sakhalin, Sea of Japan	holotype: ZISP 1/47386 paratypes: ZISP 2/23745-8/23752, 9/23754	= *Glycera macrobranchia*
ovigera	***Glycera***	SCHMARDA 1861: 95; pl. 30, fig. 239; textfigs. a-c, k	Neu-Seeland, Hafen von Auckland	syntypes: NHMW 992	***Glycera ovigera***
oxycephala	***Glycera***	EHLERS 1887: 121; pl. 41, figs. 7-11	locality unknown [? Gulf of Mexico or Caribbean Sea]	holotype: MCZ 713 [dried]	***Glycera oxycephala***
pacifica	***Glycera***	KINBERG 1865: 245	Mare pacificum: insula Foua [Eimeo, Society Islands]	holotype: SSM Type 504	***Glycera pacifica***
papillosa	*Glycera*	GRUBE 1857: 176	Valparaiso [Chile]	presumed lost	nomen dubium
papillosa var. *nigticans*	*Glycera*	Q. WU 1994	? Yong-xing Island, Xisha Islands [China]	?	= ? *Glycera tesselata*
parashadi	*Glycera*	FAUVEL 1932: 126			lapsus calami for *Glycera prashadi*
patagonica	*Hemipodia*	KINBERG 1865: 245	Fretum Magalhaense: York Bay [Chile]	holotype: SSM Type 526	= *Hemipodia simplex*

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pectinans	*Hemipodus*	HARTMANN-SCHRÖDER 1962b: 130; pl. 12, figs. 69-71	Chimbote, Peru	holotype: HZM P-14330 paratypes: HZM P-14331	= *Hemipodia californiensis*
peruviana	*Glycera*	QUATREFAGES 1866: 177	Callao, côtes du Pérou [Peru]	holotype: MNHN A120	= *Glycera unicornis*
†pilicae	***Glycera***	SZANIAWSKI 1974: 190; pl. 1, figs. 10-11; pl. 3, figs. 9-12	Brzostówka near Tomaszów Mazowiecki from Volgian, Jurassic	holotype (only jaws): ZPAL No. Sc. III/31	***†Glycera pilicae*** [fossil]
polygona	*Glycera*	RISSO 1826: 417	no locality details [? Mediterranean Sea]	presumed lost	nomen dubium
posterobranchia	***Glycera***	HOAGLAND 1920: 620; pl. 51, figs. 3-8	Station D5375, Tayabas Light, Marinduque Island [Philippine Islands]	holotype: USNM 18960	***Glycera posterobranchia***
prashadi	*Glycera*	FAUVEL 1932: 126; pl. 5, figs. 1-8	"Investigator" Sta. 292, Persian Gulf; Sta. 549, Mergui, Bay of Bengal [Burma]; Sta. 631, Nankuari [Nicobaren]	syntype: BMNH 1938.5.7.45, UCO R/5 (slide with parapodia)	= *Glycera cinnamomea*
profundi	*Glycera*	CHAMBERLIN 1919b: 350; pl. 64, figs. 2-6	Gulf of California: Sta. 3435 (lat. 26°48"N., long. 110°45'20"W.)	holotype: USNM 19362, MCZ (slide with parapodia)	= *Glycera branchiopoda*
prosobranchia	***Glycera***	BÖGGEMANN & FIEGE 2001: 38; figs. 6, 9c-d, 10	near Fort San Lorenzo, Rio Chagres, Panama	holotype: USNM 186547 paratype: SMF 9676	***Glycera prosobranchia***
pseudorobusta	***Glycera***	BÖGGEMANN & FIEGE 2001: 39; figs. 7, 9e-f, 10	Wrightsville Beach, Intracoastal Waterway and Banks Channel, North Carolina, U.S.A.	holotype: USNM 52963 paratype: SMF 9450	***Glycera pseudorobusta***
pusilla	*Glycera*	DELLE CHIAJE 1844: 33; pl. 177, figs. 1-4	no locality details [? Sicily, Italy]	presumed lost	nomen dubium
pustatulus	*Hemipodus*	FRIEDRICH 1956: 61, fig. 4a-c	Metalio, El Salvador	lectotype: SMF 2706 paralectotypes: SMF 2697, 2703	***Hemipodia pustatula***
retractilis	*Glycera*	QUATREFAGES 1866: 185 [= *Glycera fallax* sensu CLAPARÈDE 1863: 54; pl. 15, figs. 14-15]	no locality details; CLAPARÈDE (1863): St. Vaast [France]	lost	= ? *Glycera tridactyla*
robusta	***Glycera***	EHLERS 1868: 656; pl. 24, figs. 31-32	San Francisco and Mendocino in Californien [U.S.A.]	syntypes: MCZ 193, 233	***Glycera robusta***
roseus	*Hemipodus*	QUATREFAGES 1866: 194	Chili [Chile]	holotype: MNHN A122	= *Hemipodia simplex*
"*rotundus*"	"*Hemipodus*"	"NONATO 1981: 104, figs. 125-128" [unpublished Ph. D. thesis! = nomen nudum]	"Ilha Grande, Praia da Tabatinga, Brasil"	"holotype": IOUSP "paratypes": IOUSP, SMF 8628	= *Hemipodia simplex*
Rouxii	*Glycera*	AUDOUIN & MILNE EDWARDS 1833: 264	Marseille [France]	presumed lost	= ? *Glycera unicornis*
rugosa	*Glycera*	JOHNSON 1901: 409; pl. 10, figs. 101-102	Puget Sound: Neah Bay, Salmon Bay, ? vicinity of Port Townsend [Washington, U.S.A.]	syntype: LACM-AHF Poly 1852	= *Glycera pacifica*

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russa	***Glycera***	GRUBE 1870a: 61	Ovalau [Fiji]	holotype: HZM V-1093	***Glycera russa***
"*rutilans*"	"*Glycera*"	"GRUBE in MCINTOSH 1885: 345" [nomen nudum]	"Ceylon"	"holotype": BMNH 1974.10.2.9	= *Glycera cinnamomea*
saccibranchis	*Glycera*	GRUBE 1878: 181; pl. 8, fig. 10	Talibon, Philippinen	holotype: MPUW 289	= *Glycera macintoshi*
sagittariæ	***Glycera***	MCINTOSH 1885: 346; pl. 42, fig. 8; pl. 22A, fig. 10	off Arrou Islands [Indonesia]	holotype: BMNH 1885.12.1.241	***Glycera sagittariae***
septentrionalis	*Hemipodus*	ROULE 1896: 452; pl. 20, figs. 4-5; pl. 24, fig. 22	Station 5: Long. E. [W] 6°15'. — Lat. N. 45°47', Golfe de Gascogne [France]	presumed lost	nomen dubium
serrulifera	*Hamiglycera*	EHLERS 1908: 105; pl. 14, figs. 14-17	Vald.-Stat. 4. 60°42'N., 3°10'W. [North Sea]	holotype: ZMB 4471 [dried]	= *Glycera lapidum*
setosa	*Glycera*	ØRSTED 1842: 124	Grønland; ÖRSTED (1843): Godthaab	? syntypes: ZMB Q. 4331	= *Glycera capitata*
simplex	*Glycera*	GRUBE 1857: 177	Valparaiso [Chile], Callao [Peru]	holotype: ZMUC-POL-393	***Hemipodia simplex***
siphonostoma	*Lumbricus*	DELLE CHIAJE 1822: pl. 29, figs. 21-24	no locality details [? Naples, Italy]	presumed lost	nomen dubium
"*Sorex*"	"*Nereis*"	"JOHNSTON 1865: 187" [nomen nudum]	"South Devon" [England]	? "holotype": BMNH	= *Glycera lapidum*
spadix	*Glycera*	TREADWELL 1943: 3, figs. 8-11	Gulf of Davao, Philippine Islands	holotype: AMNH 3241	= *Glycera brevicirris*
sphyrabrancha	***Glycera***	SCHMARDA 1861: 96; pl. 30, fig. 240; textfigs. a-c	Südliche Keys in Jamaica	holotype: NHMW 1001	***Glycera sphyrabrancha***
subaenea	*Glycera*	GRUBE 1878: 184; pl. 8, fig. 8	Canal von Lapinig, Philippinen	1. lectotype: ZMB Q. 4338 2. paralectotypes: MPUW 290	1. = *Glycera macintoshi* 2. = *Glycera onomichiensis*
taprobanensis	*Glycera*	SILVA 1965: 550, fig. 9a-l	Mount Lavinia, Ceylon	holotype: BMNH 1963.14.3	= *Glycera natalensis*
taurica	*Glycera*	CZERNIAVSKY 1881: 383	Sinus Hursuficus [harbour of ? Gurzuf, Black Sea]	presumed lost	nomen dubium
tenuis	*Glycera*	HARTMAN 1944: 254; pl. 21, figs. 23-24	Dillon Beach, California [U.S.A.]	holotype: LACM-AHF Poly 769	= *Glycera oxycephala*
teres	*Nereis*	DALYELL 1853: 144; pl. 20, figs. 1-2	Marine. Shore. [? Great Britain]	presumed lost	nomen dubium
tesselata	***Glycera***	GRUBE 1863: 41; pl. 4, figs. 4, 4a	Lussin piccolo., Neresine bei Osero [Croatia]	syntypes: ZMB Q. 4339	***Glycera tesselata***
tesselata var. *minor*	*Glycera*	LA GRECA 1947: 277, figs. 10-11	Benda Palumbo, Gaiola [Italy]	presumed lost	= ? *Glycera tesselata*
triannulatus	*Hemipodus*	HARTMANN-SCHRÖDER 1960a: 13, figs. 24-28	"La Ventanilla" bei Lima [Peru]	holotype (only mf+pf): HZM P-15265	= *Hemipodia californiensis*
"*tricolor*"	"*Nereis*"	"JOHNSTON 1865: 185" [nomen nudum]	"South Devon" [England]	? "holotype": BMNH 1852.10.15.4	= ? *Glycera fallax*
tridactyla	***Glycera***	SCHMARDA 1861: 97; pl. 30, fig. 238; textfigs. a-b, k	Atlantischer Ocean [St. Malo, France]	syntypes: NHMW 1006	***Glycera tridactyla***
unicornis	***Glycera***	SAVIGNY 1818: 315	locality unknown [? Egypt]	holotype: MNHN A120	***Glycera unicornis***

species	genus	original description	locus typicus	type	status
verdescens	*Glycera*	CHAMBERLIN 1919a: 14	Laguna Beach, California [U.S.A.]	presumed lost	nomen dubium
vesiculosa	*Glycera*	PARFITT 1867: 234, figs. 1-5	Exmouth, Devonshire [England]	presumed lost	= *Glycera fallax*
viridescens	*Glycera*	STIMPSON 1854: 33	Grand Manan, Bay of Fundy, New Brunswick [Canada]	presumed lost	= ? *Goniada maculata*
yenourensis	*Hemipodus*	IZUKA 1912: 250; pl. 23, figs. 14-15	Nagahama in the Gulf of Yenoura in Prov. Suruga, Ujina in Prov. Aki, Misaki [Japan]	syntypes: UMUT	***Hemipodia yenourensis***

Systematic section

Familiy **Glyceridae** GRUBE 1850

Type genus (OD): *Glycera* SAVIGNY 1818: 314
Synonyms: Glycerea GRUBE 1850: 309 [partim]
Glyceraceæ – JOHNSTON 1865: 184 [partim]
Glycerea – KINBERG 1865: 244
Glyceridæ – MALMGREN 1867: 183

Diagnosis: Body with numerous segments, elongated, tapering at both ends. Segments bi- or triannulate. Prostomium conical, mostly pointed, distinctly annulated; anteriormost annulus with four appendages, anterior pair situated termino-laterally and posterior pair more dorso-laterally; posteriormost annulus with one pair of nuchal organs; eyes absent. Proboscis long, cylindrical to club-shaped, muscular, densely covered with numerous papillae bearing specialized structures on their posterior sides; tip of proboscis with four dark, hook-like curved jaws, each with a rod-like, more or less triangular or deeply incised aileron. Usually first two parapodia uniramous, consisting of neuropodia, ventral cirri and compound chaetae only; following parapodia uni- or biramous with dorsal and ventral cirri; largest parapodia in mid-body region; in biramous parapodia notopodia and neuropodia indistinctly separated from each other; each biramous parapodium with two prechaetal and one or two postchaetal lobes. Branchiae present or absent, blister-like to simple digitiform or branched, retractile in some species; located on different parts of parapodia. Noto- and neuropodia each with a single acicula; notopodia with simple capillaries, neuropodia usually with spinigerous compound chaetae only. Pygidium with a pair of slender anal cirri. Anus situated dorsally on pygidium.

Key to the genera

1. Ailerons rod-like; branchiae absent 2
– Ailerons with more or less triangular or deeply incised bases; prostomium consisting of more than 5 rings, appendages relatively short; usually first two parapodia uniramous, following parapodia biramous with two prechaetal and one or two postchaetal lobes; branchiae present or absent; notopodia with simple capillaries, neuropodia with spinigerous compound chaetae .... ***Glycera*** SAVIGNY 1818 (p. 31)
2. First two parapodia uniramous, following parapodia biramous with two prechaetal and two postchaetal lobes; prostomium consisting of 4 rings, appendages relatively long; notopodia with simple capillaries, neuropodia with spinigerous and falcigerous compound chaetae .... ***Glycerella*** ARWIDSSON 1899 (p. 78)
– All parapodia uniramous with one prechaetal and one postchaetal lobe; prostomium consisting of more than 5 rings, appendages relatively short; notopodia absent, neuropodia with spinigerous compound chaetae ....***Hemipodia*** KINBERG 1865 (p. 79)

Genus ***Glycera*** SAVIGNY 1818

Type species (M): *Glycera unicornis* SAVIGNY 1818: 315
Synonyms: *Glyceres* PETERS in BIANCONI 1862: 477
Rhynchobolus CLAPARÈDE 1868: 492
Euglycera VERRILL 1881: 296
Hamiglycera EHLERS 1908: 105
Telake CHAMBERLIN 1919b: 345
†*Paranereites* EISENACK 1939: 169

Diagnosis: Body with numerous segments, elongated, tapering at both ends. Segments bi- or triannulate. Prostomium consisting of more than five rings, appendages relatively short. Each aileron with a more or less triangular or deeply incised base. Usually first two parapodia uniramous, consisting of neuropodia, ventral cirri and compound chaetae only; following parapodia biramous with dorsal and ventral cirri; notopodia and neuropodia indistinctly separated from each other; each parapodium with two prechaetal and one or two postchaetal lobes. Branchiae present or absent, blister-like to simple digitiform or branched, retractile in some species; located on different parts of parapodia. Notopodia with simple capillaries, neuropodia usually with spinigerous compound chaetae only.

Key to the species of *Glycera* SAVIGNY 1818

1. Proboscidial papillae without terminal fingernail structure 2
- Proboscidial papillae with terminal fingernail structure 26

2. One postchaetal lobe in all parapodia 3
- Two postchaetal lobes at least on parapodia of mid-body 7

3. In mid-body notopodial prechaetal lobes shorter than neuropodial lobes; branchiae absent 4
- In mid-body prechaetal lobes of about same length, or notopodial lobes longer; branchiae present or absent . 5

4. Digitiform proboscidial papillae with straight, median, longitudinal ridge; ailerons with pointed triangular bases; notopodial prechaetal lobes slightly shorter than neuropodial lobes ..... ***Glycera capitata*** ØRSTED 1842 (p. 34, figs. 16-18)
- Digitiform proboscidial papillae with undulating ridge; ailerons with slight dent in pointed triangular bases; notopodial prechaetal lobes distinctly shorter than neuropodial lobes ..... ***Glycera lapidum*** QUATREFAGES 1866 (p. 37, figs. 19-21)

5. Proboscidial papillae with straight, median, longitudinal ridge or without ridges 6
- Conical proboscidial papillae with about 5-20 transverse ridges; ailerons with slightly arched bases; prechaetal lobes of about same length; branchiae absent ..... ***Glycera oxycephala*** EHLERS 1887 (p. 40, figs. 22-24)

6. Branchiae absent; ailerons with pointed triangular bases; notopodial prechaetal lobes longer than neuropodial lobes; digitiform proboscidial papillae with straight, median, longitudinal ridge ..... ***Glycera branchiopoda*** MOORE 1911 (p. 41, figs. 25-27)
- Simple, digitiform branchiae, situated termino-dorsally on parapodia; ailerons with deeply incised bases; prechaetal lobes of about same length; digitiform proboscidial papillae without ridges ..... ***Glycera sphyrabrancha*** SCHMARDA 1861 (p. 42, figs. 28-30)

7. Ailerons with deeply incised bases; postchaetal lobes short, rounded; branchiae absent 8
- Ailerons with interramal plate; postchaetal lobes variable; branchiae present or absent 11

8. Prechaetal lobes of about same length; digitiform proboscidial papillae present 9
- In mid-body notopodial prechaetal lobes longer than neuropodial lobes; conical proboscidial papillae with straight, median, longitudinal ridge ..... ***Glycera guatemalensis*** BÖGGEMANN & FIEGE 2001 (p. 43, figs. 31-33)

9. Digitiform proboscidial papillae with straight, median, longitudinal ridge 10
- Digitiform proboscidial papillae with about 6-20 transverse ridges ..... ***Glycera brevicirris*** GRUBE 1870 (p. 44, figs. 34-36)

10. Digitiform proboscidial papillae with longitudinal ridge only ..... ***Glycera tesselata*** GRUBE 1863 (p. 47, figs. 37-39)
- Digitiform proboscidial papillae with additional single, terminal, U-shaped ridge ..... ***Glycera benhami*** BÖGGEMANN & FIEGE 2001 (p. 48, figs. 40-42)

11. Proboscidial papillae with more than 3 ridges 12
- Proboscidial papillae with up to 3 ridges 18

12. Proboscidial papillae usually with more than 10 ridges (small specimens sometimes with less ridges) 13
- Proboscidial papillae with less than 10 ridges 15

13. Parapodia without branchiae 14
- Simple, retractile, digitiform branchiae, situated dorsally on posterior side of parapodial bases; conical proboscidial papillae with about 6-16 ridges; ailerons with triangular bases; both postchaetal lobes more or less triangular ..... ***Glycera russa*** GRUBE 1870 (p. 49, figs. 43-45)

14. Ailerons with pointed triangular bases; digitiform proboscidial papillae with about 10-17 ridges; rounded or more or less blunt triangular notopodial and slightly longer, triangular neuropodial postchaetal lobes ..... ***Glycera bassensis*** BÖGGEMANN & FIEGE 2001 (p. 50, figs. 46-48)
- Ailerons with rounded triangular bases; conical proboscidial papillae with about 6-16 ridges; both postchaetal lobes more or less blunt triangular ..... ***Glycera celtica*** O'CONNOR 1987 (p. 51, figs. 49-51)

15. In mid-body postchaetal lobes of about same length or notopodial lobes slightly longer than neuropodial lobes; blister-like branchiae dorsally of parapodial bases 16
- In mid-body notopodial postchaetal lobes slightly or distinctly shorter than neuropodial lobes; two digitiform branchiae or branchiae absent 17

16. Conical proboscidial papillae with 4-9 U-shaped ridges; ailerons with triangular bases; rounded to blunt triangular notopodial and slightly shorter, more rounded neuropodial postchaetal lobes ..... ***Glycera robusta*** EHLERS 1868 (p. 52, figs. 52-54)
- Conical proboscidial papillae with 4-9 mainly V-shaped ridges; ailerons with rounded triangular bases; more or less distinctly triangular notopodial and shorter, more rounded neuropodial postchaetal lobes ..... ***Glycera pseudorobusta*** BÖGGEMANN & FIEGE 2001 (p. 53, figs. 55-57)

17. Two simple, digitiform branchiae, situated dorsally and ventrally on parapodial bases; conical proboscidial papillae with 4-8 ridges; ailerons with rounded triangular bases; rounded notopodial and longer, triangular neuropodial postchaetal lobes ..... ***Glycera dibranchiata*** EHLERS 1868 (p. 53, figs. 58-60)
- Parapodia without branchiae; conical proboscidial papillae with 4-6 ridges; ailerons with triangular bases; postchaetal lobes more or less distinctly triangular, notopodial lobes slightly shorter than neuropodial lobes ..... ***Glycera knoxi*** KIRKEGAARD 1995 (p. 54, figs. 61-63)

18. Parapodia of mid-body with slender triangular notopodial and distinctly shorter, rounded neuropodial postchaetal lobes; retractile branchiae, situated medially on anterior side of parapodia; conical proboscidial papillae with 3 ridges; ailerons with rounded, triangular or triangular bases 19
- Parapodia of mid-body with two postchaetal lobes of about same length or notopodial lobes only slightly longer than neuropodial lobes; branchiae present or absent; conical proboscidial papillae variable; ailerons with triangular bases 20

19. 1-6 retractile, digitiform branchial rami; ailerons with rounded triangular bases; in anterior parapodia only one, medially inserted, slender triangular postchaetal lobe ..... ***Glycera macintoshi*** GRUBE 1877 (p. 55, figs. 64-66)
- Simple, retractile, digitiform branchiae; ailerons with triangular bases; all biramous parapodia with two postchaetal lobes ..... ***Glycera nicobarica*** GRUBE 1868 (p. 57, figs. 67-69)

20. Parapodia with retractile branchiae; prechaetal lobes of about same length 21
- Parapodia without branchiae; notopodial prechaetal lobes distinctly shorter and narrower than neuropodial lobes; notopodial postchaetal lobes blunt triangular and slightly longer than rounded neuropodial lobes; conical proboscidial papillae with 3 ridges .... ***Glycera madagascariensis*** BÖGGEMANN & FIEGE 2001 (p. 58, figs. 70-72)

21. Both postchaetal lobes short and more or less rounded; simple, retractile branchiae, situated medially on anterior side of parapodia; conical proboscidial papillae with 3 ridges 22
- Both postchaetal lobes slender triangular; branchiae variable; conical proboscidial papillae variable 23

22. Branchiae blister-like; rounded, sometimes slightly blunt triangular notopodial and slightly shorter, rounded neuropodial postchaetal lobes .... ***Glycera fallax*** QUATREFAGES 1850 (p. 58, figs. 73-75)
- Branchiae digitiform; rounded, sometimes slightly blunt triangular postchaetal lobes, notopodial lobes usually slightly broader and longer than neuropodial lobes .... ***Glycera sagittariae*** MCINTOSH 1885 (p. 60, figs. 76-78)

23. Retractile, bush-like branchiae, situated dorsally on posterior side of parapodial bases 24
- 1-2 retractile, digitiform branchial rami, situated medially on anterior side of parapodia; conical proboscidial papillae with 3 ridges ..... ***Glycera unicornis*** SAVIGNY 1818 (p. 60, figs. 79-81)

24. Conical proboscidial papillae with 2 or 3 transverse ridges 25
- Conical proboscidial papillae with Y-shaped ridge in combination with 1-3 vertical ridges apically .... ***Glycera ovigera*** SCHMARDA 1861 (p. 62, figs. 82-84)

25. Conical proboscidial papillae with 3 ridges .... ***Glycera pacifica*** KINBERG 1865 (p. 64, figs. 85-87)
- Conical proboscidial papillae with 2 ridges .... ***Glycera americana*** LEIDY 1855 (p. 65, figs. 88-90)

26. Parapodia of mid-body with two slender triangular postchaetal lobes of about same length 27
- Parapodia of mid-body with slender triangular notopodial and shorter, more or less rounded neuropodial postchaetal lobes 29

27. Proboscidial papillae with long stalk and some longitudinal ridges on nail; ailerons with pointed triangular bases 28
- Proboscidial papillae with short stalk and without ridges on nail; ailerons with triangular bases; blister-like branchiae dorsally on parapodial bases .... ***Glycera lamelliformis*** MCINTOSH 1885 (p. 66, figs. 91-93)

28. Parapodia without branchiae .... ***Glycera onomichiensis*** IZUKA 1912 (p. 68, figs. 94-96)
- 1-5 digitiform branchial rami, situated dorsally on parapodial bases ..... ***Glycera cinnamomea*** GRUBE 1874 (p. 69, figs. 97-99)

29. Parapodia with branchiae 30
- Parapodia without branchiae; proboscidial papillae with short stalk and 4-6 V-shaped terminal ridges on nail; ailerons with triangular bases .... ***Glycera gilbertae*** BÖGGEMANN & FIEGE 2001 (p. 70, figs. 100-102)

30. In mid-body and posterior parapodia neuropodial postchaetal lobes more or less rounded; simple, digitiform branchiae, situated termino-dorsally on parapodia 31
- In posterior parapodia neuropodial postchaetal lobes as long as notopodial lobes and equally slender triangular; simple, digitiform branchiae, situated medio-dorsally on parapodia; proboscidial papillae with medium-length stalk; ailerons with pointed triangular bases .... ***Glycera posterobranchia*** HOAGLAND 1920 (p. 70, figs. 103-105)

31. All biramous parapodia with two postchaetal lobes 32
- In anterior parapodia only one, medially inserted, slender triangular postchaetal lobe; proboscidial papillae with short stalk; ailerons with triangular bases .... ***Glycera macrobranchia*** MOORE 1911 (p. 71, figs. 106-108)

32. Proboscidial papillae with long stalk 33
- Proboscidial papillae with medium-length or short stalk 34

33. Stalk without ridges; ailerons with pointed triangular bases ..... ***Glycera alba*** (O.F. MÜLLER 1776) (p. 72, figs. 109-111)
- Stalk with numerous ridges; ailerons with triangular bases ..... ***Glycera natalensis*** DAY 1957 (p. 73, figs. 112-114)

34. Proboscidial papillae with short stalk; prostomium consisting of about 11-15 rings; ailerons with triangular bases 35

- Proboscidial papillae with medium-length stalk; prostomium consisting of about 19-28 rings; ailerons with pointed triangular bases ..... ***Glycera africana*** ARWIDSSON 1899 (p. 74, figs. 115-117)

35. Branchiae from anterior to near posterior end .... ***Glycera tridactyla*** SCHMARDA 1861 (p. 75, figs. 118-120)
- Branchiae limited to anterior half of body .... ***Glycera prosobranchia*** BÖGGEMANN & FIEGE 2001 (p. 77, figs. 121-123)

Glycera capitata ØRSTED 1842
Figs. 16-18

1842 *Glycera capitata* ØRSTED: 123 [Locus typicus: Grønland, ÖRSTED (1843): fra flere af Grönlands Havne (from several harbours of Greenland); syntypes: ? ZMB Q. 4306]

1842 *Glycera setosa* ØRSTED: 124 [Locus typicus: Grønland, ÖRSTED (1843): Godthaab; syntypes: ? ZMB Q. 4331]

1843a *Glycera capitata* – ÖRSTED: 196; pl. 7, figs. 87-88, 90-94, 96, 99 [fra flere af Grönlands Havne]

1843a *Glycera setosa* – ÖRSTED: 198; pl. 7, figs. 89, 95, 97 [Godthaab, Grönland]

1866 *Glycera Mulleri* QUATREFAGES: 172 [Locus typicus: Groënland; syntypes: MNHN A117] partim

1885 *Glycera kerguelensis* MCINTOSH: 344; pl. 35A, figs. 3-4 [Locus typicus: Station 149H, off Christmas Harbour [?], Kerguelen; holotype (only mf): BMNH 1885.12.1.239]

?1899 *Glycera longipes* M. SARS in ARWIDSSON: 9 [nomen nudum]

1901 *Glycera nana* JOHNSON: 411; pl. 10, figs. 103, 103a [Locus typicus: Port Orchard, Puget Sound (Washington, U.S.A.); syntypes: MCZ 1878, LACM-AHF Poly 1851]

1937b *Hemipodia canadensis* TREADWELL: 348, figs. 1-3 [Locus typicus: 43°10'N., 63°00'W., Nova Scotia (Canada); type: presumed lost]

1965 *Glycera mimica* HARTMAN: 97, pl. 15a-e [Locus typicus: New England; holotype: LACM-AHF Poly 771]

?1972 *Glycera capitata antarctica* AVERINCEV: 136; pl. 16, figs. 1-6, 11, 12 [Locus typicus: R/V AKADEMIK KNIPOVITSCH St. 212, 51°29.3'S 57°16.5'W (Falkland Islands); holotype: ZISP 1/15776]

?1972 *Glycera capitata abyssicola* AVERINCEV: 138; pl. 16, figs. 7-10; pl. 17, figs. 4-6 [Locus typicus: R/V OB St. 252, 271, 274 (Agulhas Basin); syntypes: ZISP 1/50398, 2/50399]

Material examined:

Type material: *Glycera capitata*: Greenland; ? 3 syntypes: cs/182/152/9.8/6.7; cs/143/145/7.6/5.2; cs/88/131/8.0/5.2 (ZMB Q. 4306) — *Glycera setosa*: Greenland; ? 2 syntypes: cs/101/145/8.0/4.5; af/74/96/7.2/3.7 (ZMB Q. 4331) — *Glycera mulleri*: Greenland; 5 syntypes: cs/73/160/4.0/2.6 (b, dried); af/14/30/5.0/3.0 (c); cs/82/133/5.0/3.5 (d); cs/49/128/4.2/3.5; af/23/74/2.5/1.6 (e) (MNHN A117 partim) — *Glycera kerguelensis*: HMS CHALLENGER St. 149H, Kerguelen, off Christmas Harbour, 48°45'S 69°14'E, 29.I.1874, 127 fms, volcanic mud; holotype: mf/43/87/5.2/4.0 (BMNH 1885.12.1.239) — *Glycera nana*: U.S.A., Washington, Puget Sound, Port Orchard, 2.VII.1898, intertidal; syntype: cs/33/74/4.0/2.5 (MCZ 1878) - Port Orchard, 21.VII.1898; syntype: cs/48/139/4.1/2.9 (LACM-AHF Poly 1851) — *Glycera mimica*: R/V ATLANTIS St. G1, New England, 39°42'N 70°39'W, 24.V.1961, 2000 m; 68 paratypes: cs/12/62/1.1/0.8; cs/12/60/1.1/0.8; cs/9.6/56/0.9/0.6; cs/8.2/46/0.9/0.6; cs/4.7/35/0.5/0.4; cs/3.5/31/0.5/0.3; cs/3.0/25/0.5/0.3; af/22.8/56/2.0/1.3; af/22.3/54/1.8/1.3; af/16.4/62/1.3/0.9; af/16.3/54/1.4/1.0; af/15.2/48/1.6/1.2; af/14/55/1.1/0.8; af/13.2/49/1.4/1.0; af/11.3/40/1.6/1.2; af/9.6/41/1.1/0.7; af/9.5/46/1.1/0.8; af/8.3/42/1.2/0.8; af/8.2/38/0.9/0.6; af/8.0/40/0.9/0.6; af/7.7/46/0.7/0.5; af/7.3/47/0.9/0.6; af/7.0/39/1.0/0.7; af/7.0/28/1.3/0.9; af/6.4/37/1.0/0.7; af/6.0/33/1.2/0.8; af/6.0/29/1.4/1.0; af/5.8/35/0.8/0.5; af/5.8/32/1.0/0.7; af/5.5/38/1.0/0.7; af/5.5/26/1.0/0.6; af/5.3/37/0.6/0.4; af/5.2/38/0.9/0.6; af/5.2/35/0.8/0.5; af/5.2/35/0.8/0.5; af/5.2/25/2.6/1.9; af/5.1/30/0.8/0.5; af/5.0/38/0.9/0.6; af/5.0/36/1.0/0.7; af/5.0/35/0.5/0.3; af/5.0/29/1.0/0.7; af/5.0/28/0.9/0.6; af/4.9/33/1.0/0.6; af/4.7/30/0.8/0.5; af/4.7/29/0.8/0.5; af/4.6/30/0.8/0.5; af/4.5/28/0.7/0.5; af/4.4/34/0.9/0.6; af/4.3/27/0.5/0.3; af/4.2/27/0.9/0.6; af/4.2/23/0.5/0.3; af/4.0/27/0.6/0.4; af/4.0/24/0.5/0.3; af/4.0/21/1.0/0.6; af/3.2/23/0.9/0.6; af/3.1/29/0.6/0.4; af/3.1/24/0.7/0.5; af/3.1/23/0.8/0.5; af/3.0/25/0.5/0.3; af/3.0/20/0.6/0.4; af/2.4/19/0.5/0.3; af/2.4/19/0.5/0.3; af/2.3/22/0.6/0.3; af/2.3/16/0.5/0.3; af/2.2/16/0.6/0.4; af/2.0/19/0.5/0.3; af/2.0/17/0.6/0.4; af/2.0/16/0.6/0.4 (LACM-AHF Poly 772) — *Glycera capitata antarctica*: R/V AKADEMIK KNIPOVITSCH St. 212, 51°29.3'S 57°16.5'W, 23.III.1965, 143 m, sand and shells; holotype: af/19/67/2.0/1.4 (ZISP 1/15776) - R/V AKADEMIK KNIPOVITSCH St. 233, 38°02'S 55°10'W, 31.III.1965, 202 m, sand; paratype: af/14/59/1.6/1.1 (ZISP 11/15786) - R/V OB St. 276, 53°07'-08'S 71°48'-51'E, 1.IV.1957, 100-140 m, sand; paratype: af/36/83/3.3/2.7 (ZISP 17/15792) - R/V OB St. 282, 64°03'-06'S 98°33'-26'E, 9.IV.1957, 470-525 m, sand and pebble; paratype: cs/16/74/2.0/1.4 (ZISP 18/15793) - R/V OB St. 668, 69°55'S 12°50'E, 8.III.1963, 230-260 m; paratype: af/58/108/5.2/4.2 (ZISP 20/15797) — *Glycera capitata abyssicola*: R/V OB St. 271, 49°49.3'S 41°21.3'E, 25.III.1957, 4350 m, mud; syntype: cs/11/78/1.6/1.2 (ZISP 1/50398) - R/V OB St. 274, 52°32.3'S 57°42'-43.9'E, 30.III.1957, 4730 m, mud; syntype: af/7/18/2.6/1.4 (ZISP 2/50399)

Additional material: Baffin Bay: NW Greenland, 1 mile NW Conical Rock, 22.VII.1940; cs/43/135/4.1/3.1; af/63/117/5.9/4.6; af/45/83/5.2/4.6; af/35/60/5.2/3.7 (USNM 24082) - Canada, S end of Coburg Island, 75°40'N 78°58'W, 4.VIII.1935, 48-80 ft.; af/93/134/7.6/5.4 (USNM 22543) — NW Atlantic: R/V HERO St. 28, Davis Strait, 66°28'N 57°26'W to 66°29'N 56°42'W, 17.VIII.1968, 580-610 m, soft mud; af/11/37/2.0/1.3 (USNM 97549) - R/V HERO St. 29C, Greenland, off Little Hellefiske Bank, 64°57'N 53°38'W, 18.VIII.1968, 79-85 m, rocky bottom; cs/55/120/2.7/1.8; cs/47/138/3.5/2.6; af/33/104/3.9/2.7 (USNM 50953) - Greenland, Godthaab; cs/113/145/9.0/5.3 (BMNH 1853.10.17.16) - Godthaab, from the shore; cs/71/124/7.0/5.0; cs/60/125/7.6/5.8 (BMNH 1853.10.17.19) - Godthaab; cs/177/150/9.2/7.0 (BMNH 1853.10.17.32) - Godthaab, 70 fms.; cs/83/133/6.8/4.8 (BMNH 1853.10.17.51) - Godthaab; cs/161/142/11.0/8.0 (BMNH 1853.10.17.63) - W Greenland, Colonie Gröweir; cs/88/142/7.1/5.2 (NHMW A. 17372) - Greenland; cs/98/136/6.6/4.8 (MNHN A118) - Greenland; af/92/130/7.1/5.2 (MNHN A118) - Greenland; af/97/131/7.4/4.5 (MNHN A120, epitokous) - Greenland; cs/100/139/6.3/4.7; af/54/85/6.0/4.6 (BMNH 1882.5.12.4) - Greenland; cs/129/141/7.0/5.0; af/29/108/2.8/2.0 (ZMB Q. 4308) - Greenland; cs/115/145/5.4/4.0; cs/112/141/6.3/4.7; cs/102/147/6.0/4.5; cs/89/140/6.3/4.5; cs/72/134/6.9/4.9; cs/61/124/6.0/4.4; cs/61/118/5.8/4.2; cs/60/130/4.5/2.9; cs/44/124/4.4/3.6; af/130/122/8.3/6.0; af/128/129/8.2/7.2; af/97/102/7.3/5.4; af/72/118/5.5/4.0; af/71/72/6.9/4.7; af/64/107/4.8/3.2; af/62/115/8.9/6.0; af/53/99/7.2/5.6; af/51/108/3.1/2.2; af/25/40/6.0/4.2 (ZMB Q. 4309) - USS ALBATROSS St. 2459, Canada, off Newfoundland, Whale Bank, 46°23'00"N 52°45'00"W, 2.VII.1885, 88 fms, coarse gray sand; cs/62/133/6.2/5.2 (USNM 29115) - USS ALBATROSS St. 2699, Newfoundland, St. Pierre Bank, 45°04'00"N 55°23'00"W, 22.VIII.1886, 72 fms, coral; cs/36/112/3.9/2.3 (USNM 13270) - New Brunswick, St. Andrews, VII.1963; cs/45/148/4.2/2.9;

af/19/55/2.1/1.2 (USNM 74385) - U.S.A., Maine, Dog Island, Eastport, XI.1969 and III.1970, 2 ft; cs/148/120/6.1/4.1; cs/138/158/4.6/3.0 (USNM 43031) - Eastport; af/29/106/4.8/4.0 (USNM 395) - USS ALBATROSS St. 2502, Canada, Nova Scotia, Sable Island, 44°19'00"N 60°39'15"W, 7.VII.1885, 54 fms, yellow sand; cs/64/142/5.5/4.5 (USNM 29122) - U.S.A., New Hampshire, off Hampton Beach, 30.VII.1963; cs/33/89/3.2/2.3 (USNM 74386) - Massachusetts, Cape Cod Bay, 8.IX.1954, 10 fms; cs/44/112/2.3/1.7 (USNM 33385) - off Cape Cod, 26.IX.1879, 46 fms; cs/44/135/4.1/3.1 (USNM 6924) - USS ALBATROSS St. 2526, Massachusetts, between Cape Sable and Cape May, 41°40'45"N 65°46'00"W, 13.VII.1885, 121 fms, pebble; af/22/86/3.6/2.7 (USNM 29126) - USS ALBATROSS St. 2526, between Cape Sable and Cape May, 41°40'45"N 65°46'00"W, 13.VII.1885, 121 fms, pebble; af/20/79/4.0/2.7 (USNM 29127) - Georges Bank St. 4, 40°41'37"N 69°02'28"W, 24.V.1977, 76 m; af/30/66/4.0/2.6 (USNM 91441) - R/V FISH HAWK St. 1152, off Martha's Vineyard, 39°58'N 70°35'W, 4.X.1882, 115 fms, sand; af/54/136/5.2/4.1 (USNM 29134) - 39°23'2"N 73°00'5"W, 6.VIII.1977, 62 m; af/32/99/1.5/1.2 (USNM 56923) — SW Atlantic: Argentina, Ushuaia, 9.XII.1892, intertidal; cs/40/124/3.0/2.3; cs/36/112/3.2/2.5; af/35/83/3.0/1.8 (HZM V-4812) - Ushuaia, 9.XII.1892, intertidal; af/26/79/3.1/2.0 (SMF 8547) - RRS DISCOVERY St. 51, East Falkland Island, 7 miles N 50°E to 7.6 miles N 63°E off Eddystone Rock, 4.V.1926, 105-115 m, fine sand; cs/58/104/4.8/3.0; cs/47/96/4.3/2.6; cs/27/74/3.2/2.0; af/40/73/3.2/1.8 (BMNH 1930.10.8.1345-46) - RRS DISCOVERY St. 45, South Georgia, 2.7 miles S 85°E of Jason Light, 6.IV.1926, 238-270 m, gray mud; cs/88/115/6.9/4.7; cs/85/134/7.0/5.0; cs/73/111/5.2/3.5; cs/59/94/5.5/3.8; cs/46/112/4.3/2.0; cs/39/90/6.0/4.5; af/70/89/8.8/6.0 (BMNH 1930.10.8.1351-52) - USNS ELTANIN St. 219, 55°47-52'S 66°17-24'W, 23.IX.1962, 115 m; af/14/64/1.8/1.4; af/10/61/2.0/1.6; af/9/55/1.9/1.0 (USNM 55961) - USNS ELTANIN St. 1058, 59°50-52'S 32°27-23'W, 4.IV.1964, 650-659 m; af/20/52/1.4/1.0; af/10/40/2.0/1.3 (USNM 55945) - USNS ELTANIN St. 1084, 60°22-23'S 46°50-52'W, 15.IV.1964, 298-403 m; af/15/59/1.6/1.0 (USNM 55956) - USNS ELTANIN St. 1081, 60°35-34'S 40°44'W, 13.IV.1964, 631-641 m; af/40/98/4.0/3.0; af/16/44/2.8/2.0; af/9/35/1.3/0.8 (USNM 55954) - USNS ELTANIN St. 1082, 60°50-52'S 42°55-56'W, 14.IV.1964, 298-302 m; af/30/63/4.4/3.1; af/14/54/1.4/0.8; af/12/64/1.4/0.8; af/9/48/1.3/0.8 (USNM 55955) - R/V WALTER HERWIG St. 171, 60°53.60'S 55°46.10'W, 27.II.1985, 260 m, muddy fine sand with stones; af/18/67/2.8/2.0 (HZM P-20681) - R/V WALTER HERWIG St. 171, 60°53.60'S 55°46.10'W, 27.II.1985, 260 m, muddy fine sand with stones; cs/14/73/1.0/0.6; cs/10/71/1.3/0.9; af/11/51/1.4/0.8 (SMF 8549) - R/V POLARSTERN St. 144, 60°58.28'S 55°04.26'W, 10.VI.1986, 328 m, clay with small stones; cs/27/113/3.7/2.5 (HZM P-21819) - R/V POLARSTERN St. 144, 60°58.28'S 55°04.26'W, 10.VI.1986, 328 m, clay with small stones; cs/12.5/62/1.5/1.0 (SMF 8550) - USNS ELTANIN St. 1079, 61°26-24'S 41°55'W, 13.IV.1964, 593-598 m; af/38/108/4.3/3.5; af/21/61/1.8/1.1; af/16/63/1.4/1.0; af/7.5/41/1.1/0.7; af/6/26/1.0/0.6 (USNM 55953) - USNS ELTANIN St. 997, 61°44-46'S 55°56-54'W, 14.III.1964, 769 m; af/30/55/5.3/4.3; af/12/59/1.2/0.7 (USNM 55943) - USNS ELTANIN St. 437, 62°50-51'S 60°40-35'W, 9.I.1963, 267-311 m; af/7/44/1.3/0.8 (USNM 55941) — N Atlantic: R/V SEVASTOPOL 5 St. 1170, 66°29'N 32°55'W, 1.VIII.1957, 300 m; af/14/54/2.1/1.3; af/7/33/1.3/0.9 (MSU) - R/V SEVASTOPOL 5 St. 1172, 65°28'N 33°53'W, 212 m; af/70/126/5.0/3.0 (MSU) - SEVASTOPOL 9 St. 1640, 64°55'N 35°03'W, 15.VII.1958, 308 m; af/43/102/5.0/3.8 (MSU) - R/V SEVASTOPOL 9 St. 1660, 61°17'N 41°13'W, 19.VII.1958, 1160 m; af/41/92/4.0/2.8; af/6.5/30/1.0/0.6 (MSU) — Barents Sea: Spitzbergen, Wijde Bay, Lake Valley, St. 2442, 28.VII.1906, ca. 20 m; af/26/65/4.2/3.0 (MNHN A416) - R/V Helgoland St. 45, Spitzbergen, Bismark Strait, 78°58.5'N 20°35'E, 14.VIII.1898, 35 m, stones; af/16/55/2.3/1.7 (ZMB 6151 partim) - R/V Helgoland St. 21, Spitzbergen, Ice-Fjord, 78°12'N 15°0'E, 16.VII.1898, 210-240 m, blue mud with some small stones; af/43/105/5.2/4.2 (ZMB 6151 partim) - R/V N. MASLOV 5 St. 397/417, 77°30'N 33°30'E, 10.X.1969, 160 m; af/58/65/4.4/2.8 (MSU) - R/V SHMIDT 26 St. 2602, 77°10'N 68°00'E, 14.VIII.1986, 270 m; cs/46/126/3.1/2.2; cs/31/116/1.6/1.1; cs/26/99/1.5/1.0 (MSU) - R/V N. MASLOV 5 St. 242/263, 76°42'N 27°30'E, 31.VIII.1969, 125 m; af/23/74/2.7/1.6 (MSU) - R/V SHMIDT 26 St. 2406, 76°16'N 51°51'E, 17.VIII.1986, 275 m; af/42/77/3.3/2.1; af/18/49/3.3/2.1 (MSU) - R/V ALAID 30 St. 8, 74°30'N 32°30'E, 4.VII.1980, 180-200 m; cs/24/96/1.6/1.0; af/26/71/3.1/2.2 (MSU) - R/V TUNETZ 105 St. 23, 74°30'N 31°20'E, 8.VII.1978, 240-250 m; cs/36/114/2.6/2.0; af/13/50/2.1/1.4; af/8/38/1.4/0.9 (MSU) - R/V N. MASLOV 1 St. 50/174, 72°20'N 50°00'E, 18.XI.1968, 85 m; af/47/89/4.8/3.0 (MSU) - R/V MOLCHANOV 14 St. 1201, 72°00'N 50°40'E, 28.IV.1986, 115 m; cs/32/113/3.9/2.3; af/42/83/3.8/2.2; af/22/91/2.4/1.7 (MSU) - R/V MOLCHANOV 14 St. 1201, 72°00'N 50°40'E, 28.IV.1986, 115 m; af/29/85/3.1/2.0 (SMF 8559) - R/V P'-61 26 St. 67, 72°00'N 46°00'E, 26.VI.1968, 200 m; af/15/46/3.6/2.4 (MSU) - R/V N. MASLOV 1 St. 61/167, 71°00'N 49°00'E, 17.XI.1968, 125 m; af/37/88/3.0/2.2; af/24/66/3.0/2.0; af/17/59/3.2/2.3 (MSU) - R/V N. MASLOV 10 St. 90, 70°52'N 50°32'E, 22.VIII.1970, 124 m; af/15/50/2.8/1.8 (MSU) - R/V N. MASLOV 1 St. 51/173, 70°50'N 51°00'E, 18.XI.1968, 125 m; cs/64/131/4.2/2.8; cs/64/120/3.3/2.7; cs/60/116/2.8/1.9; af/35/75/3.0/2.0 (MSU) - R/V N. MASLOV 1 St. 51/173, 70°50'N 51°00'E, 18.XI.1968, 125 m; af/45/91/3.3/2.2 (SMF 8560) - R/V ANDREI PERWOSWANNY St. 289, 70°39'N 43°40'E, 7.VIII.1900, 75 m; af/60/118/5.2/4.1 (ZISP 192/4523) - R/V P'-61 26 St. 90, 70°30'N 41°30'E, 1.VII.1968, 70 m; cs/41/137/3.0/2.0; af/57/122/3.5/2.5; af/43/94/5.1/4.0 (MSU) - R/V P'-61 26 St. 90, 70°30'N 41°30'E, 1.VII.1968, 70 m; af/37/62/5.0/3.6 (SMF 8562) - R/V MOLCHANOV 14 St. 9105, 70°24'N 41°31'E, 18.IV.1986, 80 m; cs/17/88/1.7/1.1; cs/15/85/1.6/1.0; af/29/94/2.2/1.7 (MSU) - R/V P'-61 26 St. 84, 70°00'N 43°00'E, 30.VI.1968, 90 m; af/39/105/3.3/2.4 (MSU) - R/V Helgoland St. 5, Norway, Trold-Fjord, near whaling station, 70°1'N 24°1'E, 10.VI.1898, surface; cs/63/137/5.2/2.5 (ZMB 6151 partim, epitokous) - R/V SHMIDT 26 St. 9303, 69°53'N 41°39'E, 17.IX.1986, 98 m; af/9.5/52/1.2/0.8; af/6/28/1.2/0.8 (MSU) - R/V N. MASLOV 10 St. 74, 69°44'N 51°10'E, 20.VIII.1970, 72 m; af/30/70/3.3/2.3 (MSU) - R/V N. MASLOV 10 St. 123/97, 69°30'N 47°00'E, 24.VIII.1970, 52 m; cs/52/110/5.0/3.8; cs/40/137/2.8/1.7; af/28/89/2.8/1.8 (MSU) - R/V VICHEGDA 10 St. 15, 69°29'N 33°04'E, 27.VII.1977, 30 m; af/10/23/4.0/2.4 (MSU) - R/V VICHEGDA 10 St. 21, 69°04'N 36°25'E, 7.VIII.1977, 35 m; af/28/70/3.3/2.1 (MSU) - R/V P'-61 26 St. 105, 69°00'N 38°00'E, 10.VII.1968, 170 m; cs/44/144/4.0/2.8; af/43/78/4.8/3.1 (MSU) - R/V ALAID 30 St. 13, 68°51'N 37°20'E, 11.VII.1980, 70-80 m; af/58/121/5.4/4.0; af/43/93/2.9/1.9; af/32/80/3.6/2.5 (MSU) - R/V ALAID 30 St. 13, 68°51'N 37°20'E, 11.VII.1980, 70-80 m; cs/96/140/5.8/4.4 (SMF 8556) - R/V P'-61 26 St. 102, 68°45'N 40°00'E, 7.VII.1968, 110 m; af/26/66/4.2/2.3 (MSU) - R/V N. MASLOV 10 St. 13, 68°00'N 47°36'E, 12.VIII.1970, 46 m; cs/53/141/2.2/1.3 (MSU) - The White Sea Biological Station of Moscow State University, 66°34'N 33°08'E, 20.VII.1979, 10-15 m; cs/54/122/5.7/4.3 (MSU[1]) - The White Sea Biological Station of Moscow State University, 66°34'N 33°08'E, 9.-18.VI.1984, 10-20 m; cs/29/106/3.0/2.0; cs/21/89/2.1/1.3; af/34/124/2.1/1.2; af/31/116/2.0/1.2; af/28/72/4.0/2.6; af/19/61/2.6/1.7; af/17/50/2.0/1.2 (MSU) - The White Sea Biological Station of Moscow State University, 66°34'N 33°08'E, 9.-18.VI.1984, 10-20 m; af/20/71/2.9/1.8 (SMF 8553) - White Sea, Eremeevskiy Porog St. 303, 11.VIII.1997, 10 m; cs/22/102/2.4/1.8 (MSU) - White Sea, Kostian Island St. 55, 30.VII.1997, 16 m; af/14/50/2.7/1.7 (MSU) - Kostian Island, 21.VIII.1997, 24 m; af/38/72/4.7/3.0 (MSU) - R/V KUZNETZOV St. 1, White Sea, Dvinski Bay, 20.VIII.1996, 17.5 m; af/26/102/1.6/1.1 (MSU) - R/V KUZNETZOV St. 12, Dvinski Bay, 22.VIII.1996, 16 m; cs/40/119/3.0/2.3; cs/38/132/2.8/2.0; cs/32/113/2.4/1.7 (MSU) - R/V KUZNETZOV St. 13, Dvinski Bay, 22.VIII.1996, 15.4 m; cs/64/136/4.2/2.8; af/38/97/3.7/2.5 (MSU) — Norwegian Sea: R/V N. MASLOV 5 St. 301/322, 75°30'N 17°00'E, 13.IX.1969, 140 m; af/22/55/3.0/2.1 (MSU) - R/V SHMIDT 26 St. 1903, 75°08'N 18°10'E, 5.VIII.1986, 62 m; cs/69/151/4.2/3.0; cs/41/123/2.5/1.8; cs/30/128/2.3/1.5; cs/26/111/1.3/0.9; cs/19/97/1.2/0.8; cs/6/53/0.8/0.4; af/83/134/6.0/4.0; af/32/82/3.0/2.2; af/22/89/1.6/1.0; af/22/71/3.0/2.0; af/14/67/1.1/0.6; af/11/58/1.4/1.0; af/10/63/1.2/0.8; af/8/47/1.1/0.7; af/7/36/1.0/0.6 (MSU) - R/V SHMIDT 26 St. 1903, 75°08'N 18°10'E, 5.VIII.1986, 62 m; cs/44/141/3.9/2.7; af/29/108/2.8/2.0 (SMF 8555) - R/V N. MASLOV 5 St. 194/215, 74°15'N 18°30'E, 21.VIII.1969, 80 m; af/86/174/5.0/4.0 (MSU) - R/V ALAID 30 St. 6, 74°14' N 19°20' E, 1.VII.1980, 62-65 m; cs/93/159/4.4/3.0; cs/78/162/4.0/2.2; cs/66/148/4.0/2.5; cs/46/144/4.1/3.0; af/99/128/6.8/5.5; af/

81/112/3.2/2.0; af/71/130/4.0/2.7; af/66/133/5.4/4.2; af/63/127/4.2/2.6; af/60/94/5.0/3.0; af/59/103/3.3/2.1; af/58/92/3.1/2.3; af/57/134/4.8/3.9; af/55/111/3.9/2.3; af/55/107/3.2/2.1; af/53/101/5.2/3.3; af/53/89/3.5/2.4; af/50/133/3.9/2.4; af/49/97/3.4/2.0; af/48/104/4.8/3.0; af/47/70/5.2/3.0; af/46/97/4.2/3.0; af/46/94/4.3/2.6; af/46/85/4.2/2.8; af/45/82/5.0/3.0; af/42/109/4.7/3.3; af/42/94/3.8/2.5; af/42/91/4.2/3.0; af/41/84/4.0/2.5; af/40/89/4.1/2.8; af/40/82/5.8/4.8; af/40/73/3.1/2.0; af/39/97/4.6/3.3; af/39/88/3.4/2.2; af/38/102/3.3/2.3; af/38/93/4.8/3.8; af/37/113/3.3/2.5; af/37/111/5.0/3.5; af/37/91/4.3/2.9; af/37/87/4.0/2.8; af/35/101/5.0/3.7; af/35/95/5.8/4.5; af/35/84/4.0/3.0; af/34/96/4.1/2.8; af/34/85/3.2/2.1; af/34/68/4.0/2.2; af/32/75/4.6/3.0; af/31/62/6.2/4.1; af/30/95/4.4/3.3; af/30/80/2.9/1.8; af/30/70/4.9/3.4; af/29/66/3.6/2.5; af/28/76/4.7/3.5; af/28/74/3.9/2.1; af/28/58/6.0/4.2; af/26/64/3.2/2.4; af/25/69/3.7/2.8; af/22/60/3.1/2.0; af/21/75/3.3/2.2; af/18/55/4.5/2.6 (MSU[2]) - R/V ALAID 30 St. 6, 74°14'N 19°20'E, 1.VII.1980, 62-65 m; cs/51/131/5.6/4.0; cs/44/128/4.0/2.8; af/59/125/5.1/4.0; af/56/102/5.1/4.0; af/43/84/4.3/3.0; af/40/69/4.0/2.2 (SMF 8558) - R/V N. MASLOV 5 St. 183/204, 72°02'N 17°02'E, 19.VIII.1969, 360 m; cs/84/149/5.8/4.0; cs/83/161/7.5/5.0; cs/66/147/5.2/3.8 (MSU) - Norway, Finmarken, Karlsö, 1864, 30-40 fms; af/45/116/5.0/3.8 (SSM 971) - Tromsø, 1907; cs/111/141/8.9/6.5 (SMF 1605) - Tromsø, 1907; cs/103.5/141/6.8/5.0 (SMF 2173) - Lofoten, Sinemarck; cs/67/137/5.0/3.0; cs/52/125/5.0/2.8; af/50/103/5.2/3.7; af/46/114/5.0/3.0 (SSM 976, epitokous) - R/V TUNETZ 105 St. 6, 68°00'N 10°00'E, 15.VI.1978, 930-1010 m; af/17/53/2.5/1.9 (MSU) - R/V ALAID 30 St. 3, 68°00'N 10°00'E, 3.VI.1980, 955-960 m; af/17/43/2.1/1.3; af/16/39/1.8/1.1; af/14/42/2.0/1.3; af/12/39/1.7/1.1; af/11/36/2.2/1.5; af/11/36/2.0/1.3; af/10/30/2.2/1.6; af/9/33/2.0/1.4; af/8/33/2.1/1.5 (MSU) - R/V ALAID 30 St. 3, 68°00'N 10°00'E, 3.VI.1980, 955-960 m; cs/18/83/2.0/1.4 (SMF 8557) - ARK V/1b St. 22 KD, 67°05.74'N 18°43.33'W, 2.VI.1988, 110 m; cs/90/144/6.0/4.6; af/64/98/6.0/4.6 (SMF 9300) - ARK V/1b St. 36 KD, 67°05.74'N 18°43.39'W, 3.VI.1988, 197 m; af/60/106/7.0/5.1 (SMF 9301) - R/V SEVASTOPOL 5 St. 1073, 65°27'N 12°39'W, 14.VII.1957, 135 m; cs/46/138/3.0/2.2 (MSU) - R/V SEVASTOPOL 5 St. 1115, 62°59'N 3°26'E, 20.VII.1957, 875 m; af/11/48/1.9/1.3 (MSU) — North Sea: Norway, Bergen, 1903; cs/142/135/7.0/4.8 (SMF 9302) - Bergen; cs/20/90/2.4/1.4; af/17/58/3.0/2.2 (HZM K-594) — S Atlantic: R/V VALDIVIA 1898-99 St. 131, Bouvet Insel, 54°28'S 3°30'E, 457 m, volcanic sand; af/39/85/3.1/2.2 (ZMB 5535) — SE Atlantic: South Africa, False Bay St. FB.307, 34°07.50'S 18°31.00'E, 20.II.1947, 27.5 m, rocks; cs/19/78/1.9/1.3 (SAM A20471) — SW Indian Ocean: Marion and Prince Edwards Islands, 46°59.75'S 38°00.65'E, 26.VIII.1987, 360-376 m; cs/47/114/3.1/1.9 (SAM A21233) - 46°17.80'S 50°47.80'E, 20.IV.1976, 210-290 m; af/11/39/1.6/1.1; af/10/33/2.4/1.6 (SAM A20297) - British, Australian and New Zealand Antarctic Research Expedition St. 41, 65°48'S 53°16'E, off Enderby Land, 24.I.1930, 193 m; cs/96/137/6.3/4.2; af/26/58/4.8/3.7 (BMNH 1941.3.3.1260) — S Indian Ocean: R/V GAUSS, 65°32'S 85°30'E, 24.II.1903, 2725 m; af/20/64/2.3/1.7 (ZMB 5850 partim) - R/V GAUSS, Kaiser Wilhelm-II-Land, winter station, 3.IV.1902, 385 m; af/21/84/4.0/2.9 (ZMB 5850 partim) — NW Pacific: Russia, East Kamchatka, Cape Africa, 56°10'N 163°25'E, 1975, 80 m, pebble with gravel and shells; af/32/90/4.1/2.4 (ZISP) — W Pacific: R/V SONNE 134 St. 33 GTVA, 16°59.454'S 173°55.035'E, 20.VIII.1998, 1994 m; cs/29/89/2.8/2.0 (SMF 9303) - R/V SONNE 134 St. 66 GTVA, 16°59.47'S 173°54.86'E, 25.VIII.1998, 2008 m; cs/35/88/3.2/1.8 (SMF 9304) - R/V SONNE 99 St. 115, 16°59.65'S 173°54.73'E, 26.I.1995, 2003 m; cs/63/96/4.4/2.0 (SMF 9305, epitokous) - R/V SONNE 99 St. 59, 17°00.10'S 173°57.49'E, 18.I.1995, 2038 m; af/3/18/0.7/0.3 (SMF 9306) — SW Pacific: 42°03.2'S 174°27.2'E, 30.III.1967, 1066-1109 m; af/18/61/2.8/2.0 (NZOI E757) - 42°29.38'S 173°38.16'E, 9.XII.1982, 1020-1140 m; af/47/76/4.0/2.8; af/46/91/4.8/3.8; af/43/85/5.0/3.8; af/33/64/4.2/3.0; af/32/58/5.1/3.5; af/28/76/4.2/3.0; af/20/42/4.1/2.6 (NZOI U242 partim) - 42°29.38'S 173°38.16'E, 9.XII.1982, 1020-1140 m; af/35/78/3.9/2.4 (SMF 9307) - 42°36.5'S 173°42.5'E, 15.XII.1982, 890 m; cs/30/87/3.6/2.5; af/26/55/4.0/2.6; af/24/62/3.3/2.2; af/22/51/4.5/2.9; af/17/55/4.2/2.7; af/15/48/3.0/2.0; af/10/34/4.0/2.8 (NZOI U262) - 44°29.67'S 179°00.68'E, 7.IX.1989, 1065 m; af/9.4/30/1.3/0.7; af/9.3/35/1.2/0.7 (NZOI V362) — Beaufort Sea: U.S.A., Alaska, off Point Barrow base, 6.IX.1949, 477 ft; cs/80/130/5.9/4.2 (USNM 22546) — N Pacific: USS ALBATROSS St. 3557, Bering Sea, Alaska, Pribilof Isands, SW of St. Paul Island, 57°04'N 170°24'W, 2.IX.1893, 26 fms, sand with black specks; cs/89/145/7.9/6.0 (USNM Acc. No. 18172) - Alaska, Aleutian Islands, between Pinnacle and Ulahkta, Unalaska, 1874, 16 fms; af/60/95/6.7/4.6; af/39/90/4.0/2.7 (USNM 18633) - Alaska, Peninsula Aleutian, Pavlof; cs/107/160/7.6/6.0; af/49/75/7.0/5.2 (USNM 35965, epitokous) - Alaska King Crab Investigation St. 51-40, Alaska, Canoe Bay, 2.X.1940, 25-40 fms; cs/88/136/5.2/4.3; af/53/102/7.0/5.0 (USNM 22538) - USS ALBATROSS, Herendeen Bay, 5.VII.1890; cs/102/135/6.3/4.9; cs/77/144/5.6/4.4 (USNM 18209) - Alaska King Crab Investigation St. A 61-41, Peninsula Aleutian, 40 miles above Port Moller, 8.V.1941, 17-18 fms, sand and gravel; cs/81/134/6.2/4.4 (USNM 22534) - Alaska King Crab Investigation St. D 3-41, Peninsula Aleutian, off Chignik Bay, Castle Bay, 24.VI.1941, 21-52 fms; af/39/94/4.0/2.4 (USNM 22541) - Alaska King Crab Investigation, Alaska, Kodiak Island, off Alitak Bay, Head of Lazy Bay, 22.I.1941; cs/76/145/4.8/3.5 (USNM 22536) - Alaska, Kenai Peninsula, Cook Inlet, Homer, VIII.1959; cs/98/156/5.1/3.9; cs/96/142/8.1/5.3 (USNM 30016) - Alaska, vicinity of Thunder Bay near edge of Prince William Sound, summer 1940: af/106/130/9.5/7.0 (USNM) — NE Pacific: USS ALBATROSS, SE Alaska, Port Ellis, 1903, beach; cs/121/143/7.0/4.4; (USNM 5608) - Alaska, Cleveland Passage; cs/107/136/5.1/3.9; cs/64/125/4.3/2.9; cs/57/115/2.3/1.7; af/55/63/5.6/4.0; af/26/62/2.0/1.2 (USNM 35960) - Canada, British Columbia, Queen Charlotte Islands, old Masset; cs/68/139/5.8/4.0 (USNM 35989) - British Columbia, Rivers Inlet, VII.1951; cs/110/156/7.0/5.0 (USNM 35964) - British Columbia, Vancouver Island, Rafael Point West; cs/66/147/4.3/3.0; cs/58/137/3.0/2.3 (USNM 35962) - Vancouver Island, Departure Bay, 12.X.1924, near surface; cs/101/155/5.3/2.8; cs/76/136/5.2/3.1; cs/72/153/5.0/2.7; cs/71/148/5.2/3.2; cs/65/139/4.5/2.8; cs/54/124/4.5/2.2; af/46/105/3.9/1.8 (USNM 35966, epitokous) - British Columbia, Vancouver Island, Lennard Light West; cs/90/146/4.4/3.0; cs/68/103/4.5/3.3 (USNM 35991) - USS ALBATROSS St. 2876, U.S.A., Washington, Strait of Juan de Fuca, 48°33'N 124°53'W, 25.IX.1888, 59 fms, black sand and mud; af/29/72/5.1/3.7 (USNM 22545) - Washington, Puget Sound, West Gedney Island, 3.VIII.1940, 30 fms; cs/23/83/2.3/1.7 (USNM 33405) - Puget Sound, Fox Island, off Point Gibson, 26.VI.1939, 40-45 fms; cs/87/146/3.6/2.3; cs/85/143/5.0/3.7; cs/63/152/3.5/2.7; cs/47/126/2.7/2.0; cs/29/145/3.0/2.4; af/47/97/3.6/2.8 (USNM 33384) — Weddell Sea: USCGC GLACIER cruise 2 St. 22, 73°28.4'S 30°26.9'W, 13.III.1969, 3111 m; cs/37/85/2.6/1.7; af/21/41/1.7/1.0; af/9/34/1.0/0.6 (USNM 46646*) - USCGC GLACIER cruise 2 St. 21, 73°52'S 31°18'W, 13.III.1969, 2288 m; af/37/55/3.1/2.0 (USNM 46645*) - USCGC GLACIER cruise 1 St. 11, 74°00'S 54°56'W, 12.II.1968, 384 m; cs/53/118/4.8/3.5; af/26/63/1.8/1.2 (USNM 46631*) — Ross Sea: 78°04'S 167°23'E, 27.XII.1976, 67 m; cs/20/87/1.1/0.7 (NZOI O140*) - Antarctic (?) St. 12, 31.I.1914; 200 m; af/22/62/4.6/3.1 (AM W701*) - Antarctic (?) St. 2, 582 m; af/22/63/6.4/5.0 (AM W702*)

Diagnosis: Proboscidial papillae mainly digitiform with straight, median, longitudinal ridge; ailerons with pointed triangular bases; parapodia of mid-body with slightly longer neuropodial than notopodial prechaetal lobes; one rounded postchaetal lobe; branchiae absent.

Description: Body up to 182 mm long with up to 174 segments. Mid-body segments more or less distinctly triannulate; two anterior annuli of about same length, posterior annulus slightly longer. Conical prostomium consisting of about 8-10 rings (fig. 16a). Proboscis with two types of papillae: 1. numerous digitiform papillae with straight, median, longitudinal ridge; 2. isolated, shorter and broader, oval to globular papillae without ridges (fig. 16b, 17). Aileron with pointed triangular base (fig. 16c). First two parapodia uniramous; following

parapodia biramous (fig. 16d-l). Two slender triangular to digitiform prechaetal lobes; neuropodial lobe always slightly longer than notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe much shorter than neuropodial one. One shorter, rounded postchaetal lobe. Dorsal cirrus from 3rd parapodium, oval to globular; inserted - most clearly in anterior part of body - on body wall far above parapodial base. Ventral cirrus slender triangular to digitiform, usually slightly shorter than postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated near parapodial base. Branchiae absent.

Remarks: Epitokous stages show some morphological changes: parapodial enlargement; increased number of chaetae; shafts of chaetae elongated; occasional simple chaetae in neuropodia; proboscis (with jaws, ailerons and papillae) has more or less disappeared.

Distribution: Arctic, antarctic and adjacent cold temperate zones; intertidal to 4850 m (fig. 18)

Discussion: The descriptions and drawings of ØRSTED's (1842, 1843a) *Glycera capitata* and *Glycera setosa* (epitokous stage) predominantly agree with the material from the ZMB. It is suggested that these specimens represented syntypes, since they form part of the collection of GRUBE, who worked in Copenhagen for a while together with ØRSTED. On the label for *Glycera capitata* the collector is noted as GRUBE=OERSTED and for *Glycera setosa* ÖRSD. ÖRSD. Det. Another label shows: *Glycera capitata* (FABR.) ÖRSD., suggestive of the collaboration, because ØRSTED (1842, 1843a) questionably referred *Lumbricus capitatus* FABRICIUS 1780 to *Glycera capitata*. ÖRSTED (1843a) reported that the specimens of *Glycera capitata* are from several harbours in Greenland.

The type specimens of *Glycera mulleri* QUATREFAGES 1866, *Glycera kerguelensis* MCINTOSH 1885, *Glycera nana* JOHNSON 1901 and *Glycera mimica* HARTMAN 1965 have been examined and are believed to be identical to *Glycera capitata*. The paratypes of *Glycera mimica* appear to be juvenile stages, just as most of the types of *Glycera capitata abyssicola* AVERINCEV 1972 and *Glycera capitata antarctica* AVERINCEV 1972. The latter two subspecies are only questionably identical, since the original descriptions and drawings are lacking in detail.

Glycera longipes seems to be a manuscript name of M. SARS, which was first published by ARWIDSSON (1899, p. 9: "Die Aufschrift tragend: *Glycera longipes* M. SARS an *Glycera setosa* ÖRSTED ?, woraus doch wohl erhellt, dass auch M. SARS, der sie einsammelte, *G. setosa* unsicher und schwankend fand."). The taxon name is a nomina nuda, because a description or illustration is absent.

The type material of *Hemipodia canadensis* TREADWELL 1937 cannot be located, but the description and drawings show clearly that this taxon belongs to the genus *Glycera*. The parapodia are biramous and the notochaetae constitute simple capillaries. The relation between the noto- and neuropodial prechaetal lobes shows that this taxon is a synonym for *Glycera capitata*.

Glycera lapidum QUATREFAGES 1866
Figs. 19-21

1845	*Glycera alba* – JOHNSTON: 147; pl. 9, figs. 1-10 (non O.F. MÜLLER 1776) [Berwick Bay (England); BMNH]
1865	*Glycera capitata* – JOHNSTON: 186; pl. 15b, figs. 1-10 (non ØRSTED 1842) [Holy Island (England); BMNH]
1865	*Nereis Sorex* JOHNSTON: 187 ["Locus typicus": South Devon (England); ? "holotype": BMNH] nomen nudum
1865	*Glycera nigripes* JOHNSTON: 188 [Locus typicus: Scotland; paralectotype (hic): BMNH] partim
1866	*Glycera lapidum* QUATREFAGES: 187 [Locus typicus: no locality details, JOHNSTON (1845): Berwick Bay (England); syntypes: BMNH]
1908	*Hamiglycera serrulifera* EHLERS: 105; pl. 14, figs. 14-17 [Locus typicus: Vald.-Stat. 4. 60°42'N., 3°10'W. (North Sea); holotype: ZMB 4471 dried]
?1910	*Nereis doreæ* MCINTOSH: 478 [nomen nudum]

Material examined:
Type material: *Glycera lapidum*: England, Berwick Bay, Holy Island, littoral, sand; 2 syntypes (originally labelled *Glycera alba/capitata*): cs/45/123/4.2/3.0; af/38/79/4.2/3.3 (BMNH) — *Nereis sorex*: England, South Devon; "holotype": af/78/136/4.0/2.3 (BMNH) — *Glycera nigripes*: Scotland; paralectotype: af/23/71/2.8/1.8 (BMNH partim) — *Hamiglycera serrulifera*: R/V VALDIVIA 1898-99 St. 4, North Sea, 60°42'N 3°10'W, 486 m, blue mud; holotype: af/14/67/1.9/1.2 (ZMB 4471, dried)

Additional material: NW Atlantic: U.S.A., Massachusetts, off Eastern Point light, 2.IX.1878, 23 fms; cs/31/132/3.0/2.1 (USNM 6935) - Georges Bank St. 36, N Slope, 41°54'01"N 67°59'05"W, 1.III.1977, 140 m; af/33/92/2.3/1.9 (USNM 91429) - USS ALBATROSS St. 2076, Georges Bank, off Cape Cod, 41°13'00"N 66°00'50"W, 4.IX.1883, 906 fms, blue mud; af/11/55/1.8/1.2; af/10/41/2.0/1.2 (USNM 29098) - USS ALBATROSS St. 2048, Nantucket Shoals, 40°02'00"N 68°50'30"W, 31.VII.1883, 547 fms, coarse sand with mud and gravel; af/8/29/2.0/1.6 (USNM 29096) - USS ALBATROSS St. 2018, Virginia, off Cape Charles, 37°12'22"N 74°20'04"W, 7.V.1883, 788 fms, blue mud; af/17/45/2.2/1.7; af/6/17/2.0/1.3 (USNM 29095) — SW Atlantic: USS ALBATROSS St. 2768, Argentina, Chubut, off Península Valdés, 42°24'00"S 61°38'30"W, 14.I.1888, 43 fms, dark sand with black specks; cs/22/76/1.7/1.2 (USNM) — N Atlantic: Iceland, Ingolfskördi; af/63/102/3.5/2.0 (ZMB 10533) — Barents Sea: R/V VODNIK 25 St. 23, 71°15'N 30°00'E, 6.VI.1968, 325 m; af/12/35/1.1/0.6 (MSU) - R/V SHMIDT 26 St. 9305, 69°53'N 41°39'E, 17.IX.1986, 100 m; af/14/67/1.3/0.9; af/14/59/2.0/1.3; af/10/39/1.2/0.8 (MSU) - R/V SHMIDT 26 St. 9305, 69°53'N 41°39'E, 17.IX.1986, 100 m; af/16/66/1.4/0.9 (SMF 8554) — Norwegian Sea: R/V TUNETZ 105 St. 2, 70°26'N 17°56'E, 8.VI.1978, 120 m; af/22/70/3.8/2.7 (MSU) - R/V ATLANTIDA 9 St. 19/1384, 70°22'N 17°50'E, 148 m; cs/31/111/3.0/2.0 (MSU) - R/V SEVASTOPOL 15 St. 2500, 67°30'N 9°30'E, 15.XI.1959, 255 m; af/30/51/3.0/2.0 (MSU) - R/V SEVASTOPOL 15 St. 2506, 65°50'N 10°20'E, 17.XI.1959, 300 m; af/26/59/2.2/1.7 (MSU) - R/V SEVASTOPOL 8 St. 1403, 63°26'N 6°42'E, 5.IV.1958, 265 m; af/19/71/1.7/1.0; af/14/42/1.1/0.6; af/13/47/1.2/0.7 (MSU) - R/V

SEVASTOPOL 10 St. 1790, 62°32'N 7°00'W, 22.x.1958, 100 m; af/30/88/3.0/2.3 (MSU) - R/V SEVASTOPOL 15 St. 2548, 62°30'N 7°15'W, 95 m; cs/42/116/3.1/2.1 (MSU) - R/V SEVASTOPOL 8 St. 1443, 62°30'N 7°12'W, 11.iv.1958, 94 m; cs/36/106/3.0/2.0; cs/32/103/2.5/1.8; cs/15/93/1.8/1.1; af/47/80/4.0/2.8; af/24/73/3.0/2.2; af/15/71/1.9/1.0 (MSU[3]) - R/V SEVASTOPOL 8 St. 1443, 62°30'N 7°12'W, 11.iv.1958, 94 m; cs/41/120/3.0/2.1 (SMF 8561) - Norway, Vågsøy St. 1, 62°00'53.2"N 5°08'26.6"E, 3.ix.1996, 13 m, sand-like broken shells slightly silty with gravel and pebble; cs/34/109/2.4/1.8; cs/29/94/2.6/1.8; cs/28/97/2.4/1.8; cs/25/101/2.4/1.8; cs/24/99/2.8/2.0; cs/22/93/2.0/1.6; cs/21/95/2.2/1.4; cs/17/88/2.2/1.6; cs/17/76/1.9/1.3; cs/16/82/1.6/0.9; cs/14/76/1.8/1.2; cs/12/74/1.2/0.7; cs/11/72/1.7/1.0; cs/10/70/1.2/0.7; cs/9/74/1.2/0.7; cs/9/62/1.4/0.8; af/30/79/2.6/1.8; af/15/59/1.7/1.0; af/14/33/1.8/1.2; af/10/56/1.3/0.8 (ZMMSU) - R/V SEVASTOPOL 8 St. 1453, 62°00'N 6°14'W, 16.iv.1958, 112 m; cs/20/88/2.0/1.2 (MSU) - R/V SEVASTOPOL 5 St. 1094, 61°42'N 4°50'W, 17.vii.1957, 235 m; cs/16/75/1.4/0.8; cs/13/71/1.4/1.0 (MSU) - Norway, Florou; af/34/85/3.0/2.3; af/23/79/2.3/1.7 (ZMB 93 partim) - R/V SEVASTOPOL 10 St. 1753, 61°32'N 2°04'E, 12.x.1958, 350 m; af/16/51/3.0/1.9; af/11/41/2.6/1.6 (MSU) - R/V SEVASTOPOL 15 St. 2581, 61°21'N 3°10'W, 11.xii.1959, 1320 m; af/8/37/1.2/0.8 (MSU) - NøFlanken-98 St. 1-2, 61°20.00'N 1°57.63'E, 17.v.1998, 150 m; cs/3.5/40/0.6/0.4 (ZMMSU) — NE Atlantic: Scotland, Cumbrae; cs/38/119/3.3/2.4; af/39/104/4.2/3.0 (BMNH 1863.11.8.8 partim) - Celtic Sea, 51°N 8°W, xi.1892, 65 fms; af/43/72/3.0/2.2 (UUZM 1456) - England, Plymouth; cs/65/129/3.5/2.8; cs/56/123/3.3/2.4 (BMNH 1896.7.15.8/9) - coast of Cornwall, 20-30 fms.; cs/58/134/3.5/2.3; cs/43/119/4.0/3.0; af/25/72/3.8/2.8 (BMNH) - Coast of Cornwall; cs/50/132/4.0/2.9; cs/43/129/4.0/2.7; cs/36/106/3.4/2.7 (BMNH 1868.1.17.18) - France, St. Vaast; cs/39/104/4.0/2.5; af/37/94/3.0/2.0 (ZMB Q. 4305) — North Sea: Troll C-98 St. 50-3, 60°53.68'N 3°40.69'E, 15.v.1998, 342 m; cs/44/110/2.8/1.9 (ZMMSU) - Troll B-98 St. 41-5, 60°50.88'N 3°29.72'E, 14.v.1998, 338 m; af/25/56/3.2/2.1 (ZMMSU) - Troll B-98 St. 50-3, 60°43.66'N 3°31.17'E, 12.v.1998, 320 m; af/10/47/1.4/1.0 (ZMMSU) - R/V SEVASTOPOL 5 St. 1102, 60°35'N 0°36'W, 18.vii.1957, 135 m; cs/13/65/1.7/0.9; af/10/44/3.2/2.3 (MSU) - England, off Shetlands; cs/36/120/3.1/2.3 (BMNH 1865.3.9.14 partim) - R/V SEVASTOPOL 15 St. 2573, 60°35'N 1°25'E, 10.xii.1959, 120 m; cs/6/44/1.0/0.7; af/16/49/1.8/1.1; af/5/28/1.0/0.5 (MSU) - Oseberg Sor-98 St. 2-3, 60°23.60'N 2°48.20'E, 3.v.1998, 104 m; cs/15/87/1.6/1.0 (ZMMSU) - Norway, Bergen, 1903; af/45/72/3.4/2.5; af/39/65/3.6/2.0; af/38/69/3.2/2.2; af/37/61/3.2/2.1 (SMF 9308) - Bergen; cs/58/124/4.3/3.2; cs/50/128/4.8/3.9; af/60/91/4.4/3.2; af/18/64/2.9/2.0 (ZMB 95) - Norway, 1884; af/42/80/5.0/4.0; af/35/84/4.2/2.8; af/28/57/4.6/3.0; af/33/68/3.5/2.3; af/29/81/3.9/3.9; af/22/81/2.8/2.2; af/11/71/2.0/1.7 (SMF 9309) - Norway; af/50/95/4.5/2.9 (ZMB Q. 4302) - Norway, Denmark; af/13/62/2.3/1.8 (ZMB Q. 4301 partim) - R/V SENCKENBERG D 1990 St. 27 vV, 55°16.02'N 6°59.95'E, 12.viii.1990, 32.3 m; cs/43/129/3.2/2.5 (SMF 9310) - R/V SENCKENBERG DOG F St. 7 vV, 54°47.95'N 1°27.01'E, 17.vii.1997, 24.2 m; cs/32/109/2.6/1.8 (SMF 9311) - Germany, Lorely Bank St. T26, 7.v.1968; cs/16/86/1.3/0.9; cs/13/81/1.3/0.9 (SMF 9312) - Langeooge, 1967; cs/18/86/1.6/1.0; cs/15.5/86/1.4/0.9 (SMF 9313) - Borkum-Riff St. 2 vV, 53°54.40'N 6°54.00'E, 1.viii.1967, 24 m; cs/8/59/0.9/0.6; cs/6.7/45/0.7/0.5; cs/5.2/53/0.8/0.5; cs/5/43/0.9/0.6 (SMF 9314) - Borkum-Riff St. 35 vV, 53°49.40'N 6°27.50'E, 23.iv.1968, 23 m; cs/8.3/59/1.0/0.7; cs/5.2/44/0.6/0.4; af/8/51/1.3/0.9; af/6/58/1.0/0.7; af/4.5/30/1.1/0.8 (SMF 9315) - Borkum-Riff St. 36 vV, 53°48.43'N 6°25.92'E, 23.iv.1968, 22 m; cs/9/73/0.9/0.6; cs/6.5/74/0.9/0.6; cs/5/55/0.9/0.6 (SMF 9316) - Borkum-Riff St. 31 vV, 53°53.82'N 6°23.59'E, 22.iv.1968, 26 m; cs/13/62/1.0/0.7; cs/4.7/44/0.7/0.5 (SMF 9317) - Borkum-Riff St. 30 vV, 53°54.40'N 6°21.21'E, 22.iv.1968, 27 m; cs/8/63/0.9/0.6; cs/6.3/58/0.9/0.7; cs/5/58/0.9/0.7; af/3.8/33/0.6/0.4 (SMF 9318) - Borkum-Riff St. 76 vV, 53°43.95'N 6°18.64'E, 10.ix.1969, 22 m; cs/23/92/1.8/1.3 (SMF 9319) - Borkum-Riff St. 29 vV, 53°54.34'N 6°17.98'E, 22.iv.1968, 30 m; cs/6.8/48/0.6/0.4; cs/5.2/50/0.9/0.6; cs/4.5/55/0.7/0.5 (SMF 9320) - Borkum-Riff St. 28 vV, 53°56.22'N 6°17.41'E, 22.iv.1968, 28 m; cs/12/78/1.5/1.0; cs/9.2/65/0.9/0.6; cs/9/68/1.3/0.9; cs/7.8/62/0.9/0.6; cs/7.5/53/0.7/0.5; af/6/37/0.7/0.5; af/4.5/27/0.7/0.5 (SMF 9321) - Borkum-Riff St. 1, 30.x.1978; cs/17/98/1.6/1.0 (SMF 9322) - Borkum-Riff St. 5, 30.x.1978; cs/7.2/70/1.0/0.7 (SMF 9323) - Borkum-Riff St. 6, 30.x.1978; cs/9/59/0.7/0.5 (SMF 9324) — Mediterranean Sea: R/V GYF St. 329, France, Marseille, 1953; af/18/62/2.7/1.8 (SMF 9325) - E Marseille, St. 1996, W Cap Liouquet, 4.5-5.5 m, fine sand; af/7/38/1.2/0.8 (SMF 9326) - E Marseille, St. 1998, SE Pointe de Beaumetts, 23.viii.1965, 9-10 m, fine sand; cs/23/96/2.3/1.8 (SMF 9327) - R/V METEOR 25 St. 4 KG, 40°09.37'N 16°49.51'E, 17.v.1993, 157.9 m; cs/5/34/0.6/0.4 (SMF 9328) - R/V METEOR 25 St. 10 KG, 40°08.25'N 17°01.82'E, 17.v.1993, 1001 m; af/10/38/1.2/0.8; af/6/41/1.1/0.7; af/5.5/33/0.6/0.4; af/4/26/0.7/0.4; af/4/19/0.6/0.4; af/3.5/22/0.8/0.5; af/3/23/0.7/0.4; af/3/20/0.5/0.3; af/3/19/1.1/0.7; af/2.2/15/0.6/0.4 (SMF 9329) - R/V METEOR 25 St. 10 ES, 40°09.04'N 17°04.56'E - 40°08.98'N 17°05.90'E, 18.v.1993, 1257-1296 m; af/8/35/1.2/0.6; af/6/27/0.9/0.5 (SMF 9330) - R/V METEOR 25 St. 11 KG2, 40°01.94'N 17°16.39'E, 18.v.1993, 1524 m; cs/5.6/36/0.8/0.5; cs/3.5/25/0.6/0.4; cs/3.2/23/0.5/0.3; af/9/34/1.0/0.6; af/8.5/43/0.6/0.4; af/8/32/1.5/0.9; af/7/28/1.0/0.6; af/6/33/1.0/0.6; af/5/32/0.7/0.4; af/5/28/1.0/0.6; af/5/28/0.8/0.5; af/5/27/1.0/0.7; af/4.3/24/0.6/0.3; af/4/23/0.8/0.5; af/4/23/0.5/0.3; af/4/22/0.7/0.4; af/4/22/0.6/0.4; af/4/21/0.7/0.4; af/3.5/24/0.8/0.5; af/2.7/17/0.5/0.3; af/2.6/17/0.5/0.3; af/2.5/15/0.5/0.3; af/1.8/15/0.5/0.3; af/1.6/13/0.5/0.3 (SMF 9331) - R/V METEOR 25 St. 11 KG1, 40°01.68'N 17°16.41'E, 18.v.1993, 1529 m; cs/4.8/32/0.5/0.5; af/7/35/1.0/0.6; af/6/27/0.6/0.4; af/3.4/22/0.8/0.5; af/3.1/22/0.5/0.3; af/3/20/0.6/0.4; af/2.1/16/0.5/0.3; af/1.5/12/0.5/0.3 (SMF 9332) - R/V METEOR 25 St. 12 KG1, 39°53.83'N 17°41.45'E, 18.v.1993, 506 m; cs/3.1/21/0.5/0.3; af/8/35/1.0/0.6; af/7.5/32/1.0/0.6; af/5.2/26/0.8/0.4; af/4.8/27/1.0/0.6; af/4.8/25/0.8/0.5; af/4.2/23/0.8/0.5; af/4/25/0.8/0.5; af/3.2/19/0.7/0.4; af/3/16/0.8/0.5; af/2.9/16/0.6/0.4; af/2/15/0.5/0.3 (SMF 9333) - R/V METEOR 25 St. 12 KG2, 39°53.78'N 17°41.52'E, 18.v.1993, 504 m; af/11.5/42/1.2/0.7; af/9/33/1.2/0.8; af/7.4/30/1.0/0.7; af/7.3/30/1.1/0.7; af/6.4/27/1.2/0.7; af/6/28/0.9/0.6; af/5.6/31/0.7/0.4; af/5/27/0.8/0.5; af/5/23/1.0/0.7; af/5/23/0.8/0.5; af/5/23/0.8/0.5; af/4.2/20/0.9/0.6; af/4/24/0.9/0.6; af/4/21/0.9/0.6; af/3.9/20/0.9/0.6; af/3.2/20/0.9/0.6; af/2.3/16/0.7/0.4; af/2/14/0.6/0.4 (SMF 9334) - R/V METEOR 25 St. 13 KG1, 39°24.84'N 18°56.78'E, 19.v.1993, 911 m; af/11.5/39/1.7/1.0; af/9.4/39/1.2/0.8; af/6/29/0.9/0.6; af/3.8/20/0.8/0.5; af/3/18/0.6/0.4; af/2.9/20/0.6/0.4 (SMF 9335) - R/V METEOR 25 St. 13 KG2, 39°24.79'N 18°56.87'E, 19.v.1993, 912 m; cs/7.6/45/0.7/0.4; cs/2.6/23/0.5/0.3; af/15.4/49/1.3/0.9; af/7.5/26/1.1/0.7; af/7/35/0.8/0.6; af/7/34/0.9/0.6; af/6/28/0.9/0.6; af/5.5/29/0.8/0.5; af/5.3/29/0.7/0.5; af/5.2/25/0.8/0.5; af/3.4/21/0.5/0.3; af/3.4/20/0.7/0.5; af/3/19/0.6/0.4; af/3/19/0.5/0.3; af/2.1/15/0.7/0.5 (SMF 9336) - R/V METEOR 25 St. 14 KG1, 39°09.78'N 19°26.36'E, 19.v.1993, 1008 m; cs/3.1/19/0.6/0.4; af/6.6/33/1.1/0.7; af/1.8/12/0.5/0.3 (SMF 9337) - R/V METEOR 25 St. 15 KG1, 37°38.89'N 18°24.67'E, 20.v.1993, 3008 m; cs/3.8/23/0.5/0.3; cs/2.3/18/0.4/0.2; af/1.8/13/0.5/0.3; af/1.7/12/0.5/0.3 (SMF 9338) - R/V METEOR 25 St. 15 KG2, 37°38.83'N 18°24.86'E, 21.v.1993, 3004 m; cs/3.1/23/0.5/0.3; cs/2.4/22/0.5/0.3; af/4.3/23/0.5/0.3; af/3/26/0.5/0.3; af/2/19/0.4/0.2; af/2/16/0.4/0.2; af/1.8/16/0.4/0.2 (SMF 9339) - R/V METEOR 25 St. 16 KG1, 36°36.48'N 21°34.28'E, 22.v.1993, 3848 m; af/2/20/0.4/0.2 (SMF 9340) - R/V METEOR 25 St. 16 KG2, 36°36.38'N 21°34.02'E, 23.v.1993, 3848 m; cs/1.8/20/0.4/0.2 (SMF 9341) - R/V METEOR 25 St. 16 Ku, 36°35.69'N 21°31.95'E - 36°37.68'N 21°30.37'E, 22.v.1993, 3947-3832 m; af/1.3/16/0.3/0.2 (SMF 9342) - R/V METEOR 25 St. 16 ES, 36°37.13'N 21°32.29'E - 36°37.89'N 21°30.96'E, 22.v.1993, 3855-3735 m; af/4.5/39/0.5/0.3 (SMF 9343) - R/V METEOR 25 St. 18 KG1, 34°44.42'N 25°51.55'E, 25.v.1993, 1431 m; af/5/26/1.0/0.6; af/1.8/14/0.5/0.3 (SMF 9344) - R/V METEOR 25 St. 18 KG2, 34°44.39'N 25°51.09'E, 26.v.1993, 1383 m; af/5.5/30/0.7/0.5; af/2.8/21/0.5/0.3 (SMF 9345) - R/V METEOR 25 St. 20 KG2, 34°02.74'N 27°46.73'E, 28.v.1993, 2455 m; af/4.4/25/0.7/0.5; af/3.2/25/0.5/0.3; af/2.1/15/0.7/0.5 (SMF 9346) - R/V METEOR 25 St. 21 KG1, 33°36.29'N 28°34.21'E, 29.v.1993, 3037 m; af/5.2/28/1.1/0.6 (SMF 9347) - R/V METEOR 25 St. 22 KG2, 33°14.77'N 29°27.43'E, 30.v.1993, 2948 m; af/14.5/45/1.7/1.0; af/6.2/37/1.0/0.6; af/3/20/0.3/0.2 (SMF 9348) - R/V METEOR 25 St. 38 KG2, 34°25.96'N 32°37.28'E, 5.vi.1993, 2474 m; af/2/16/0.4/0.2 (SMF 9349) - R/V METEOR 25 St. 37 KG2, 33°19.93'N 33°24.74'E, 3.vi.1993, 1855 m; af/4.4/23/0.7/0.3; af/1.6/15/0.4/0.2 (SMF 9350) -

R/V METEOR 25 St. 37 KG1, 33°19.98'N 33°24.75'E, 3.VI.1993, 1875 m; cs/2/19/0.4/0.2; af/4.4/23/1.1/0.7; af/3.2/21/0.6/0.4 (SMF 9351) - R/V METEOR 25 St. 35 KG2, 33°01.65'N 34°50.71'E, 2.VI.1993, 1022 m; cs/2.2/19/0.4/0.2; af/4/22/1.0/0.6; af/3.6/20/0.8/0.5; af/3.2/22/0.8/0.5; af/3.2/21/0.7/0.4; af/3/18/0.6/0.4; af/2/14/0.5/0.3 (SMF 9352) - R/V METEOR 25 St. 35 KG1, 33°01.66'N 34°50.73'E, 2.VI.1993, 1024 m; af/14.2/44/1.0/0.6; af/9.5/36/0.7/0.4; af/5/27/1.0/0.6; af/3/21/0.6/0.4 (SMF 9353) - R/V METEOR 25 St. 25 ES, 32°00.43'N 31°53.64'E - 32°00.45'N 31°52.85'E, 1.VI.1993, 195-191 m; af/9/39/1.3/0.8; af/8/37/1.2/0.8; af/4.5/28/1.0/0.6; af/4.5/26/0.8/0.5; af/2/17/0.3/0.2 (SMF 9354) - R/V METEOR 25 St. 24 KG2, 32°19.42'N 31°10.60'E, 31.V.1993, 1006 m; af/10/39/1.0/0.6 (SMF 9355) - R/V METEOR 25 St. 24 ES, 32°19.59'N 31°07.34'E - 32°19.60'N 31°06.14'E, 1.VI.1993, 1019-1021 m; af/18/50/2.2/1.5; af/16/39/1.0/0.4; af/10/29/0.9/0.5; af/6/24/1.0/0.5 (SMF 9356) - R/V METEOR 25 St. 23 KG2, 32°40.91'N 30°35.81'E, 31.V.1993, 1944 m; af/2/14/0.8/0.5 (SMF 9357) — W Indian Ocean: R/V L'AMITIE, Seychelles, Mahé, 4°36.52'S 55°33.63'E, 23.III.2000, 34 m, mud/coarse coral sand; cs/9/54/0.8/0.5; cs/4/30/0.5/0.3 (pers. collection) - R/V L'AMITIE, Seychelles, Mahé, 4°37.25'S 55°32.24'E, 23.III.2000, 22 m, mud/coarse coral sand; cs/10/55/0.8/0.5; af/8/30/1.0/0.6 (pers. collection) — S Indian Ocean: R/V VALDIVIA 1898-99 St. 137 (?167), New Amsterdam, 37°45'S 77°33'E, 496 m; af/36/76/4.3/3.3 (ZMB 4470) - R/V VALDIVIA 1898-99 St. 137 (?167), New Amsterdam, 37°45'S 77°33'E, 496 m; af/34/57/3.4/2.6 (ZMB 10594) — Bay of Bengal: Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — South China Sea: China, Hainan, Yezhu Island, N side, 19.III.1992; cs/9.5/59/1.0/0.6 (SMF 9358) - Yezhu Island, S side, 23.III.1992; af/6/31/1.6/1.0 (SMF 9359) — Tasman Sea: R/V TANGAROA Cruise 81-T-1 St. 154, Australia, Victoria, central Bass Strait, 38°33.4'S 144°54.9'E, 12.XI.1981, 55 m, coarse shell; cs/16.5/85/1.7/1.0; cs/15/82/1.3/0.7; cs/14/67/1.7/1.0; cs/11/76/1.5/0.8; af/19/68/2.0/1.4; af/18/49/2.1/1.1; af/9/40/1.5/0.8; af/6/28/1.3/0.7 (MV F 80204) - R/V TANGAROA Cruise 81-T-1 St. 170/8, eastern Bass Strait, 38°52.6'S 148°25.2'E, 15.XI.1981, 140 m, muddy sand; af/13/39/1.4/0.8; af/11.5/38/1.3/0.7; af/10/36/1.3/0.7; af/8.5/36/1.5/0.9; af/8/31/1.6/0.9; af/8/31/1.4/0.9; af/5/28/0.9/0.6 (MV F 80205 partim) - HMAS KIMBLA Cruise 80-K-5 St. 57, western Bass Strait, 39°06.3'S 143°21.1'E, 8.X.1980, 60 m; cs/13/62/0.9/0.5; cs/10/63/0.9/0.5; cs/7/51/0.8/0.5 (MV F 80211 partim) - R/V TANGAROA Cruise 81-T-1 St. 183/4, western Bass Strait, 39°07.0'S 143°14.6'E, 20.XI.1981, 84 m, sandy shell; af/13/49/1.5/0.9; af/13/48/1.8/1.0; af/10/53/1.3/0.7 (MV F 80209) - R/V TANGAROA Cruise 81-T-1 St. 205, central Bass Strait, 39°13.6'S 143°55.6'E, 23.XI.1981, 85 m, sandy shell; cs/26/80/1.5/0.9; cs/25/85/2.0/1.1; cs/22/73/2.2/1.2; cs/21/75/2.0/1.1; cs/20/83/1.8/0.9; cs/20/81/1.3/0.9; cs/18/73/1.7/1.0; cs/17/84/2.0/1.1; cs/16/67/1.2/0.6; cs/6.3/43/1.3/0.7; af/20/50/1.5/0.9; af/16/47/1.3/0.7; af/15/56/1.2/0.7; af/15/51/1.3/0.7; af/15/40/1.3/0.7; af/14/54/1.6/0.9; af/14/41/1.4/0.9; af/13/46/1.4/0.9; af/13/43/2.0/1.0; af/12/60/1.3/0.7; af/12/49/1.4/0.8; af/11/53/1.3/0.7; af/10/44/1.1/0.6; af/8/43/1.5/0.8; af/8/35/1.3/0.8; af/7.5/36/1.4/0.7 (MV F 80214 partim) - R/V TANGAROA Cruise 81-T-1 St. 205, central Bass Strait, 39°13.6'S 143°55.6'E, 23.XI.1981, 85 m, sandy shell; af/25/66/1.8/1.0 (SMF 8838) - R/V TANGAROA Cruise 81-T-1 St. 204, central Bass Strait, 39°16.0'S 144°05.4'E, 23.XI.1981, 82 m, sandy shell; af/21/55/1.6/0.8; af/21/49/2.0/1.0; af/20/54/2.0/1.0; af/16/51/1.8/0.9; af/15/55/1.7/0.8; af/14/50/2.2/1.1; af/13.5/49/1.3/0.8; af/13/48/1.2/0.7; af/13/42/1.6/0.9; af/12/41/2.0/1.0; af/11/42/1.4/0.8; af/10/49/1.2/0.7; af/10/35/2.0/1.1 (MV F 80217) - R/V TANGAROA Cruise 81-T-1 St. 200, central Bass Strait, 40°00.0'S 144°20.9'E, 22.XI.1981, 48 m, sandy shell; cs/10/77/1.4/0.9; cs/10/69/1.2/0.7; cs/9/54/1.0/0.7; cs/7/58/1.2/0.8; cs/7/49/0.8/0.5; cs/6/50/0.8/0.5; af/21/60/2.0/1.2; af/19/58/2.3/1.5; af/15/59/2.0/1.0; af/11/46/1.3/0.8; af/10/56/1.2/0.7; af/8/47/0.9/0.5; af/6/52/0.9/0.7; af/5.5/39/1.1/0.7; af/4.5/31/0.8/0.5; af/4/33/0.7/0.5; af/3/25/0.8/0.5 (MV F 80206) - R/V TANGAROA Cruise 81-T-1 St. 162, central Bass Strait, 40°09.4'S 147°32.6'E, 14.XI.1981, 51 m, shell; cs/26/75/2.0/1.2; cs/19/83/2.0/1.1; cs/19/78/1.7/1.0; cs/17/76/1.3/0.7; af/20/54/1.7/1.0; af/12/52/1.6/0.9; af/12/40/1.4/0.7; af/11/60/1.2/0.6; af/11/51/1.7/1.0; af/10/39/1.6/1.0; af/10/36/1.5/0.6; af/10/36/1.4/0.8; af/10/36/1.4/0.7; af/7/40/1.3/0.6; af/4/26/1.2/0.6; af/4/21/0.5/0.3 (MV F 80213 partim) - F/V SARDA Cruise 80-Sa-1 St. 112, southwestern Bass Strait, 40°22.2'S 145°17'E, 3.XI.1980, 40 m, sand; af/10/35/1.3/0.7 (MV F 80212 partim) - R/V TANGAROA Cruise 81-T-1 St. 198, western Bass Strait, 40°26.7'S 143°41.4'E, 21.XI.1981, 85 m, sandy shell; cs/10/61/1.0/0.5; cs/8/56/1.1/0.6; af/8/41/0.8/0.4 (MV F 80210) - R/V TANGAROA Cruise 81-T-1 St. 198, western Bass Strait, 40°26.7'S 143°41.4'E, 21.XI.1981, 85 m, sandy shell; cs/11/63/1.0/0.5; af/16/45/1.8/1.0 (MV F 80216 partim) - New Zealand, 39°37'S 171°58.2'E, 3.IX.1959, 266 m; cs/13/64/1.6/0.8 (NZOI C166) - 41°59.1'S 170°29.0'E, 3.II.1983, 496 m; af/8/50/1.2/0.7 (NZOI S385B) — SW Pacific: New Zealand, 42°27.0'S 173°47.8'E, 21.XII.1982, 90-102 m; cs/3/21/0.5/0.3 (NZOI U286 partim) - 42°27.3'S 173°44.2'E, 20.XII.1982, 90 m; cs/7.5/50/0.9/0.6; cs/5/38/0.8/0.5; cs/4/30/0.5/0.3; af/8/40/1.0/0.6; af/6/29/0.8/0.5; af/5/32/0.6/0.4; af/5/31/0.6/0.4; af/2.7/20/0.5/0.3 (NZOI U281 partim) - 42°27.3'S 173°44.2'E, 20.XII.1982, 90 m; af/9/44/1.7/1.1 (SMF 9360) - 42°27.95'S 173°39.80'E, 21.XII.1982, 98-95 m; af/3/23/1.2/0.7 (NZOI U284 partim) - 43°00.10'S 179°00.01'E, 12.IX.1989, 546 m; af/9/40/1.2/0.6; af/9/37/1.7/1.0; af/7/27/2.1/1.2 (NZOI V371) - 43°29.87'S 178°59.73'E, 8.IX.1989, 474 m; af/16/48/1.4/0.8 (NZOI V366 DAB) - 44°57'S 171°28'E, 19.I.1970, 60 m; cs/4/38/0.7/0.4; af/4/26/0.8/0.5 (NZOI G669) - 46°00'S 170°55'E, 8.X.1962, 126 m, shell; af/8/50/1.6/1.0 (NZOI B567) - 47°43.5'S 179°04'E, 5.XI.1962, 168 m; af/18/83/1.7/1.1 (NZOI A714) - 48°00'S 168°32'E, 17.I.1965, 134 m; af/22/65/3.3/2.8 (NZOI F97 partim) — NE Pacific: R/V EL PUMA, Mexico, Gulf of California, Cortés II St. 16, 26°53.2'N 110°04.1'W, 12.III.1985, 22.2 m; cs/14/64/1.4/0.9; cs/9/53/1.0/0.6; cs/8/50/0.9/0.6; cs/5/46/0.7/0.5; cs/5/43/0.7/0.4; af/8/38/1.2/0.8; af/5.5/32/1.0/0.7 (UNAM) — E Pacific: R/V EL PUMA, Gulf of Tehuantepec, Mimar III St. 212, 15°57.2'N 95°20.1'W, 70 m; af/23/58/2.0/1.4; af/17/50/2.0/1.3 (UNAM) — SE Pacific: R/V EUGENIE St. 500-7, Chile, Valparaiso, 6-8 fms; cs/53/95/2.2/1.2; af/27/73/2.6/1.8 (SSM 668) - R/V EUGENIE St. 474, Valparaiso, 7 fms; af/11.8/53/1.7/1.2 (SSM 669) - Valparaiso; cs/22/84/2.8/2.0 (NHMW No. 988) - Talcahuano, 8 fd.; cs/34/125/3.0/2.1 (HZM V-3846 partim)

Diagnosis: Proboscidial papillae mainly digitiform with undulating ridge; ailerons with slight dent in pointed triangular bases; parapodia of mid-body with distinctly longer neuropodial than notopodial prechaetal lobes; one rounded postchaetal lobe; branchiae absent.

Description: Body up to 78 mm long with up to 136 segments. Mid-body segments more or less distinctly triannulate; two anterior annuli of about same length, posterior annulus slightly longer. Conical prostomium consisting of about 9-12 rings (fig. 19a). Proboscis with two types of papillae: 1. numerous digitiform papillae with undulating ridge; 2. isolated, shorter and broader, conical to oval papillae without ridges (figs. 19b, 20). Aileron with slight dent in pointed triangular base (fig. 19c). First two parapodia uniramous; following parapodia biramous (fig. 19d-l). Two slender triangular to digitiform prechaetal lobes; neuropodial lobe usually more than two times as long as notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe much shorter than neuropodial one. One shorter, rounded postchaetal lobe. Dorsal cirrus from 3rd parapodium, oval to globular; inserted - most clearly in anterior part of body - on body wall far above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated near parapodial base. Branchiae absent.

Remarks: Dorsal cirrus sometimes not visible until the 4th parapodium.

Distribution: Mainly in temperate zones and sometimes in tropical seas; intertidal to 3947 m (fig. 21)

Discussion: MCINTOSH (1905) reported that QUATREFAGES (1866) established the taxon *Glycera lapidum* for specimens which were described by JOHNSTON (1845) as *Glycera alba* (MÜLLER 1776) and JOHNSTON (1865) as *Glycera capitata* OERSTED 1843. This material from Holy Island (Berwick Bay) represents syntypes because QUATREFAGES (1866) noted no material of his own.

JOHNSTON (1865) referred *Nereis teres* DALYELL 1853 and *Nereis sorex* from the LEACH collection to *Glycera capitata*. *Nereis sorex* seems to be an unpublished manuscript name of MONTAGU for a specimen from South Devon (PARFITT 1867, MCINTOSH 1905). The probable "holotype" (BMNH, South Devon) of this nomen nudum indicate that *Nereis sorex* is a synonym for *Glycera lapidum*.

One of the type specimens of *Glycera nigripes* JOHNSTON 1865 differs from the original description. The herewith fixed paralectotype support that this taxon is a synonym for *Glycera lapidum*.

EHLERS (1908) established the new genus *Hamiglycera* for glycerids with additional hard and hook-like papillae, but this is a misidentification, as AUGENER (1931) also surmised. The description and drawings of *Hamiglycera serrulifera* mainly correspond with the holotyp and are believed to refer to *Glycera lapidum*.

Nereis doreae is another nomen nudum, which was first published by MCINTOSH (1910). MCINTOSH (1910) traced the name back to LEACH (1853), but no relevant publication from this author is known.

Glycera oxycephala EHLERS 1887
Figs. 22-24

1887	*Glycera oxycephala* EHLERS: 121; pl. 41, figs. 7-11 [Locus typicus: locality unknown (? Gulf of Mexico or Caribbean Sea); holotype: MCZ 713 dried]
1899	*Glycera ehlersi* ARWIDSSON: 19 [Locus typicus: Nordsee; paratype: SSM Type 983]
?1931	*Glycera capitata* var. *benguellana* AUGENER: 303, fig. 9a-b [Locus typicus: 28°44'S 13°30'O, Benguella-Strömung westlich von Südafrika; type: presumed lost]
1944	*Glycera tenuis* HARTMAN: 254; pl. 21, figs. 23-24 [Locus typicus: Dillon Beach, California (U.S.A.); holotype: LACM-AHF Poly 769]

Material examined:

Type material: *Glycera oxycephala*: locality unknown (?Gulf of Mexico or Caribbean Sea); holotype: cs/29/118/2.3/1.4 (MCZ 713, dried) — *Glycera ehlersi*: R/V EUGENIE St. 51, North Sea, 51°59'N 1°59'E; paratype: af/45/101/3.0/2.5 (SSM Type 983) — *Glycera tenuis*: California, Marin County, Dillon Beach, 10.VI.1941, intertidal, sandy beach; holotype: cs/64/164/1.9/1.2 (LACM-AHF Poly 769)

Additional material: NW Atlantic: U.S.A., North Carolina, off Beaufort, 33°20'N 77°46'W, 1.II.1977, 25 m; af/10/33/1.3/0.9 (USNM 59115) - off South Carolina, 32°20'N 78°10'W, 15.II.1977, 411 m; cs/38/112/1.8/1.3; cs/24/93/1.3/1.0; cs/16/62/1.0/0.6; af/13/49/1.1/0.7; af/13/40/2.7/2.0 (USNM 59114) - Bermuda, Nonsuch Island, 1.IX.1930; af/19/71/1.5/1.0 (AMNH 2400 partim) - U.S.A., Georgia, Ogeechee estuary St. 43, 22.IV.1971; af/5.5/39/0.8/0.5 (SMF 9361) - Ogeechee estuary St. 63, 16.III.1971; af/32/75/1.6/1.0; af/30/72/1.5/1.0; af/26/55/1.7/1.2 (SMF 9362) - Georgia, Sapelo Island St. CJ 6, 30.VII.1969; cs/41/118/1.8/1.3; cs/31/107/1.5/1.1; cs/25/101/1.2/1.0 (SMF 9363) - off Georgia St. OSO2, 31°08.18'N 79°54.36'W, 9.III.1980, 52 m; af/24/72/1.6/1.0 (USNM 107997) - off Georgia, 31°03'N 80°26'W, 30.VIII.1977, 34 m; af/32/70/1.7/1.3; af/24/75/1.6/1.2; af/24/68/1.6/1.2; af/6/37/1.0/0.7 (USNM 59112) - Florida, St. Lucie, Hutchinson Island St. 3, 27°21.42'N 80°12.28'W, 3.XI.1971, 6.7 m; cs/29/108/1.1/0.7; af/17/65/1.0/0.7 (USNM 54492) - Hutchinson Island St. 3, 27°21.42'N 80°12.28'W, 6.VII.1972, 6.4 m; af/22/70/1.0/0.6 (USNM 54493) — Gulf of Mexico: R/V COLUMBUS St. 2960, off Florida, 25°40'N 82°20'W, XI.1977, 27 m; af/27/49/1.8/1.3 (USNM 55860) - off Florida St. 43, 26°17.24'N 82°18.53'W, 15.XII.1982, 16 m; af/26/61/1.6/1.0 (USNM 129518) - off Florida St. 41, 26°32.13'N 82°24.30'W, 4.XII.1982, 16 m; cs/41/124/1.6/1.2; af/35/92/1.1/0.7; af/10/44/1.0/0.6 (USNM 129298) - Alabama, Mississippi Sound St. 694, 30°04.14'N 87°53.50'W, 2.IV.1981, 13.4 m; af/19/42/1.2/0.8 (USNM 75466) - Mississippi Sound St. 691, 30°05.25'N 87°57.30'W, 1.XI.1980, 16.8 m; af/24/57/1.2/0.8 (USNM 75465) — Caribbean Sea: Haiti, IV.1889, beach; af/27/80/2.9/2.0 (SSM 682) - Costa Rica, Manzanillo, 24.II.1997, littoral; af/12/34/1.3/0.9 (SMF 9364) — W Atlantic: USS BLAKE 1878-79 St. 298, off Barbados, 13°3'40"N 59°37'40"W, 10.III.1879, 20 fms; af/24/84/4.0/2.5 (MCZ) - Barbados St. 1442, Alleynes Bay off Holetown, St. James, about 800 m offshore, 19.II.1964, 90-100 m, muddy sand with shell debris; cs/20/85/1.0/0.5 (ZMA) — SW Atlantic: Brazil, St. 6105 A, 25°38.00'S 47°30.20'W, 8.VIII.1982, 51 m, muddy sand with shells; cs/32/77/2.3/1.7; af/7.5/27/1.7/1.3 (SMF 9365) — NE Atlantic: Celtic Sea; cs/30/109/1.8/1.4 (USNM 81532) - England, coast of Cornwall, 40 fms.; af/35/102/2.3/1.7 (BMNH 1867.1.7.8 partim) — North Sea: Germany, Loreley Bank St. T26, 7.V.1968; cs/45/126/2.1/1.6 (SMF 9366) - Borkum-Riff St. 3 vV, 53°54.04'N 6°51.00'E, 1.VIII.1967, 26 m; af/9/46/1.2/0.8 (SMF 9367) - Borkum-Riff St. 10 vV, 53°45.14'N 6°29.43'E, 2.VIII.1972, 21 m; af/47/123/2.9/2.0; af/16/71/1.4/1.0 (SMF 9368) - Borkum-Riff St. 64 vV, 53°58.20'N 6°28.03'E, 10.IX.1969, 26 m; af/34/106/2.2/1.8 (SMF 9369) - Borkum-Riff St. 4 vV, 53°54.30'N 6°26.12'E, 2.VIII.1972, 25 m; cs/51/148/2.4/1.9; cs/35/129/1.7/1.3; cs/12/86/1.2/0.9 (SMF 9370) - Borkum-Riff St. 5 vV, 53°52.70'N 6°24.00'E, 2.VIII.1972, 26 m; cs/46/135/2.5/2.0; af/29/76/2.5/2.0; af/26/84/2.0/1.7; af/9/58/1.3/1.0 (SMF 9371) - Borkum-Riff St. 31 vV, 53°53.82'N 6°23.59'E, 22.IV.1968, 26 m; cs/33.5/114/1.7/1.3 (SMF 9372) - Borkum-Riff St. 8 vV, 53°46.85'N 6°22.97'E, 2.VIII.1972, 22 m; cs/16/89/1.4/1.0; af/73/129/3.0/2.4; af/37/102/2.6/2.0 (SMF 9373) - Borkum-Riff St. 6 vV, 53°50.82'N 6°22.68'E, 2.VIII.1972, 24.5 m; cs/43/142/2.1/1.7; cs/34/120/1.8/1.5; af/29/86/2.3/1.9 (SMF 9374) - Borkum-Riff St. 30 vV, 53°54.40'N 6°21.21'E, 22.IV.1968, 27 m; af/8.5/70/0.9/0.6; af/8/50/1.3/0.9; af/8/44/1.0/0.7 (SMF 9375) - Borkum-Riff St. 72 vV, 53°51.30'N 6°20.12'E, 10.IX.1969, 29 m; af/5.5/46/0.9/0.7 (SMF 9376) - Borkum-Riff St. 76 vV, 53°43.95'N 6°18.64'E, 10.IX.1969, 22 m; af/46/119/2.5/2.0; af/17/54/2.2/1.7 (SMF 9377) - Borkum-Riff St. 29 vV, 53°54.34'N 6°17.98'E, 22.IV.1968, 30 m; cs/31/123/1.4/1.0; af/33/115/2.1/1.8; af/21/99/1.3/0.9; af/10.5/51/1.3/0.9 (SMF 9378) - Borkum-Riff St. 28 vV, 53°56.22'N 6°17.41'E, 22.IV.1968, 28 m; cs/32/121/1.6/1.2; af/28/93/1.8/1.4; af/23/97/1.6/1.2; af/14/60/1.7/1.2 (SMF 9379) - Borkum-Riff St. 27 vV, 53°56.97'N 6°17.22'E, 22.IV.1968, 28 m; af/46/108/2.2/1.8; af/35/94/2.4/1.9; af/17.5/52/1.8/1.3; af/15.5/47/1.6/1.2 (SMF 9380) - Borkum-Riff St. 70 vV, 53°57.00'N 6°16.70'E, 10.IX.1969, 27 m; cs/44/140/2.4/2.0; af/28/86/2.2/1.8 (SMF 9381) — Mediterranean Sea: R/V METEOR 25 St. 25 Ku, 32°00.54'N 31°53.70'E - 32°00.55'N 31°52.61'E, 1.VI.1993, 199-196 m; af/6/33/1.1/0.7 (SMF 9382) - R/V METEOR 25 St. 25 ES, 32°00.43'N 31°53.64'E - 32°00.45'N 31°52.85'E, 1.VI.1993, 195-191 m; af/9.5/33/1.2/0.8 (SMF 9383) -

Italy, Sicily, SW of Mazara, 37°31'N 12°20'E, 14.v.1973, 75 m, rocky; af/32/75/2.4/2.0 (USNM Acc. No. 299591) — SE Atlantic: South Africa, Lambert's Bay St. LAM.26, 32°04.90'S 18°17.50'E, 18.I.1957, 27 m, sand with shells and rocks; af/78/116/6.8/5.1 (SAM A20468) - Lambert's Bay St. LAM.26, 32°04.90'S 18°17.50'E, 18.I.1957, 27 m, sand with shells and rocks; cs/78/169/4.2/3.0 (BMNH 1963.1.79) — W Indian Ocean: Madagascar, Nosy Mitsio St. 2, 12°35.15'S 48°28.30'E, 9.v.1969, 68 m; cs/16/77/1.3/1.0; cs/10/68/1.0/0.7 (SMF 9384) - N of Bay of Russes, 13°28.45'S 48°02.15'E, 28.VIII.1967, 35 m, sand and coarse sand; af/6/32/1.1/0.7 (SMF 9385) - Banc Pracel, near Chesterfield Islands St. 20, 17°10.15'S 43°22.00'E, 11.IV.1970, 49 m, sand; cs/80/156/2.9/2.3; af/11/51/1.1/0.8 (SMF 9386) — Arabian Sea: Kuwait, Salimiyah and Mena Abdullah, intertidal, sand; af/47/135/2.0/1.3 (BMNH 1971.45) — Bay of Bengal: India, Madras Coast, 10-12 fms; af/16/44/2.4/1.7 (ZSI W 2732/1) - Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — NW Pacific: Japan, Tohoku Region, Sendai, Ohtsuchi Bay, 14.x.1996, 70-100 m, sand and rubble; af/40/104/2.0/1.4; af/39/87/2.0/1.5 (CBM) - Ohtsuchi Bay St. 6, 14.x.1996, 70-100 m, sand and rubble; af/45/88/2.8/2.0 (CBM) — W Pacific: Australia, Queensland, Townsville, Pallarenda Beach, 1979, intertidal; cs/38/119/1.5/1.1; cs/37/116/1.4/1.0; cs/21/88/1.1/0.7 (AM W17258) - Pallarenda Beach, 1979, intertidal; cs/18/87/1.3/1.0 (AM W17259 partim) - Queensland, Haughton River estuary, nr. 522, 26.IV.1991, lower intertidal, sandflat; cs/15/91/1.2/0.8; af/4.5/27/0.8/0.6 (AM W25608) - Haughton River estuary, nr. 522, 26.IV.1991, lower intertidal, sandflat; cs/6/55/0.7/0.5 (SMF 9387) - Haughton River estuary, nr. 564, 5.IX.1991, lower intertidal, sandflat; cs/13/80/1.0/0.7 (AM W25457) - Haughton River estuary, nr. 564, 5.IX.1991, lower intertidal, sandflat; cs/21/100/1.2/0.8; af/18/66/1.4/0.8 (SMF 9388) — Tasman Sea: R/V TANGAROA Cruise 81-T-1 St. 198, Australia, Victoria, western Bass Strait, 40°26.7'S 143°41.4'E, 21.XI.1981, 85 m, sandy shell; af/22/74/1.4/1.0 (MV F 80216 partim) — NE Pacific: Canada, British Columbia, Queen Charlotte Islands, Masset, 14.IX.1935; af/52/130/3.0/2.0; af/28/56/4.1/3.0 (USNM 35945) - British Columbia, West Vancouver Island; af/110/176/3.9/2.8 (USNM 35947) - U.S.A., California, San Francisco Bay; cs/53/134/1.7/1.1 (SAM A20475) - California, Corona del Mar, Newport Bay, 18.XI.1937; cs/111/152/2.3/1.8 (USNM 35946) - R/V EL PUMA, Mexico, Gulf of California, Cortés II St. 26, 29°23.3'N 112°30.7'W, 14.III.1985, 71.9 m; af/12/36/1.2/0.8; af/11/45/1.3/0.9; af/9/35/1.3/0.9 (UNAM) - USS ALBATROSS St. 2830, Mexico, Baja California, NW of Cape San Lucas, 23°33'00"N 110°37'00"W, 1.v.1888, 66 fms, fine sand; af/17/52/2.4/1.9 (USNM)

Diagnosis: Proboscidial papillae mainly conical with about 5-20 ridges; ailerons with slightly arched bases; parapodia of mid-body with two prechaetal lobes of about same length; one rounded postchaetal lobe; branchiae absent.

Description: Body up to 111 mm long with up to 176 segments. Anterior segments biannulate, anterior annulus longer than posterior one; mid-body segments triannulate, two anterior annuli of about same length, posterior annulus slightly longer; median region (about 23rd to 59th segment) dorsally with up to 4 (sometimes up to 6 or more) indistinct tubercles on each side. Long, conical prostomium consisting of about 20-28 rings (fig. 22a). Proboscis with two types of papillae: 1. numerous conical papillae with about 5-20 ridges; 2. isolated, broader, oval to globular papillae with about 4-11 ridges; ridges U-shaped basally and V-shaped apically (figs. 22b, 23). Aileron with slightly arched base (fig. 22c). In largest specimen only first two parapodia rudimentary, otherwise up to 18 parapodia uniramous (in juveniles sometimes all parapodia uniramous); following parapodia biramous (fig. 22d-l). Two slender triangular to digitiform prechaetal lobes of about same length or sometimes neuropodial lobe slightly longer and broader than notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe distinctly shorter than neuropodial one. One shorter, rounded postchaetal lobe. Dorsal cirrus from 3rd parapodium, oval to globular; inserted near parapodial base. Ventral cirrus slender triangular to digitiform, about as long as postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated near parapodial base. Branchiae absent.

Remarks: The number of uniramous parapodia with compound chaetae and one acicula seems to be dependent on the size of the specimens. Only the first two chaetigers of very large specimens are uniramous, whereas smaller specimens carry different numbers of uniramous parapodia. In juvenile specimens the parapodia are sometimes all "uniramous", but from the 3rd to 18th parapodia simple capillary chaetae and two aciculae are present.

Distribution: In temperate zones and tropical seas; intertidal to 2951 m (fig. 24)

Discussion: The description and drawings of *Glycera oxycephala* EHLERS 1887 predominantly agree with the badly preserved holotype. The exact locus typicus is unknown (EHLERS 1887), but the material originated from the USS BLAKE expedition in either the Gulf of Mexico (1877-78) or in the Caribbean Sea (1878-79).

ARWIDSSON (1899) established the taxon *Glycera ehlersi* for specimens described by EHLERS (1868) as *Glycera lapidum* QUATREFAGES, since he did not believe that EHLERS's specimens belonged to QUATREFAGES's species. The paratype is from the North Sea and shows all the characteristics of *Glycera oxycephala*.

The description and drawings of *Glycera capitata* var. *benguellana* AUGENER 1931 were all based on a small, incomplete specimen. The parapodia, the aileron and the apparently ridged proboscidial papillae support a synonymy of this taxon with *Glycera oxycephala*, but this classification is questionable, because the type material is lost.

The holotype of *Glycera tenuis* HARTMAN 1944 has been examined and is referred to *Glycera oxycephala*.

Glycera branchiopoda MOORE 1911
Figs. 25-27

1911 *Glycera branchiopoda* MOORE: 302; pl. 20, figs. 155-156, pl. 21, figs. 157-159 [Locus typicus: Station 4574, off Cape Colnett, Lower California, Lat. 30°35'N., Long. 117°23'W. (Mexico); holotype: USNM 16847]

1919b *Hemipodus mexicanus* CHAMBERLIN: 349; pl. 63, figs. 2-3 [Locus typicus: Gulf of California: Sta.

3437 (lat. 27°39'40"N., long. 111°0'30"W.); holotype: USNM 19372]

1919b *Glycera profundi* CHAMBERLIN: 350; pl. 64, figs. 2-6 [Locus typicus: Gulf of California: Sta. 3435 (lat. 26°48"N., long. 110°45'20"W.); holotype: USNM 19362, MCZ slide with parapodia]

Material examined:

Type material: *Glycera branchiopoda*: USS ALBATROSS St. 4574, Mexico, Lower California, SW of Cape Colnett, 30°35'N 117°23'W, 8.x.1904, 1400 fms; holotype: af/85/132/6.4/3.3 (USNM 16847) - USS ALBATROSS St. 4517, Monterey Bay, off Point Pinos Lighthouse, S 52° E 9.1 miles, 24.v.1904, 750-766 fms, green mud with sand; paratype: af/35/94/4.5/2.8 (ANSP 3077) — *Hemipodus mexicanus*: USS ALBATROSS St. 3437, Gulf of California, 27°39'40"N 111°00'30"W, 23.iv.1891, 628 fms, brown mud with black specks; holotype: af/21/48/4.2/2.8 (USNM 19372) — *Glycera profundi*: USS ALBATROSS St. 3435, Gulf of California, 26°48"N 110°45'20"W, 22.iv.1891, 859 fms, brown mud with black specks; holotype: af/42/106/7.7/4.2 (USNM 19362) - slide (with parapodia) (MCZ)

Additional material: NE Pacific: U.S.A., Alaska, NE Gulf of Alaska, Tetra-Tech Alaska Exp. 1975-76 St. 8 vV, 59°48'16"N 143°06'34"W, 174-184 m; cs/28/110/3.6/2.3 (BMNH 1981.3) - Gulf of Alaska St. 46-2, 59°51'N 142°47'W, vii.1976, 144-187 m; af/21/67/2.8/1.7 (USNM 63385) - Gulf of Alaska St. 46-2, 59°51'N 142°47'W, vii.1976, 144-187 m; af/31/79/2.3/1.5 (USNM 63390) - Washington, San Juan Islands, near Argyle, 29.vi.1935; af/41/80/4.9/3.2 (USNM 33401) - Washington, Puget Sound St. 7, 47°13'30"N 122°49'36"W, 29.vii.1963, 47-84 m, silt; cs/38/122/2.3/1.4; af/32/73/4.2/2.4; af/25/73/3.9/2.4 (USNM 36586) - R/V SONNE 109/2 St. TVG 115, Oregon, Bioherm, 44°40.293'N 125°06.296'W, 23.vi.1996, 618 m; cs/37/121/3.8/2.2 (SMF 9389) - R/V SONNE 109/2 St. TVG 119, Bioherm, 44°40.146'N 125°06.685'W, 24.vi.1996, 625 m; af/47/125/4.3/2.5 (SMF 9390) - R/V SONNE 110/1A St. TVG 9, Bioherm, 44°39.258'N 125°06.003'W, 12.vii.1996, 596 m; af/13/55/2.0/1.3; af/8/35/2.2/1.4 (SMF 9391) - off California St. SB33, 39°07.19'N 123°48.18'W, 26.xi.1987, 95 m; cs/16/72/1.7/1.0; af/29/92/1.8/1.1; af/12/61/2.3/1.7 (USNM 123148) - USS ALBATROSS St. 4528, California, Monterey Bay, 27.v.1904, 545 fms; af/50/112/3.4/2.3 (USNM 16846) - USS ALBATROSS St. 4549, Monterey Bay, Point Pinos Station, S 9° W 2.6 miles, 7.vi.1904, 56-57 fms, coarse sand with shells and rocks; cs/44/117/3.0/1.6; cs/25/63/3.0/1.8 (USNM 16932) - USS ALBATROSS St. 4517, Point Pinos Station, S 52° E 9.1 miles, 24.v.1904, 750-766 fms, green mud with sand; af/37/79/4.8/3.2 (USNM 16975) - USS ALBATROSS St. 4464, Point Pinos Station, S 20° W 7.8 miles, 13.v.1904, 36-51 fms, soft dark gray mud; af/49/83/3.3/2.0; af/28/52/3.5/2.2 (USNM 17304) - California, Newport Beach, 1.vii.1933; cs/36/115/3.1/2.3; af/29/77/4.2/2.5 (USNM 35949) - USS ALBATROSS St. 4343, California, vicinity of San Diego, S point of South Coronado Island, S 60° E 3.6 miles, 11.iii.1904, 55-155 fms, fine gray sand; cs/20/73/3.0/2.0 (USNM 17034) - DSRV ALVIN St. 1169, Mexico, Gulf of California, Guaymas Basin, SW of North Hill, 27°03'N 111°23'W, 11.i.1982, 2010 m; af/26/96/3.1/1.7 (USNM 81857)

Diagnosis: Proboscidial papillae mainly digitiform with straight, median, longitudinal ridge; ailerons with pointed triangular bases; parapodia of mid-body with long notopodial and shorter neuropodial prechaetal lobes; one rounded postchaetal lobe; branchiae absent.

Description: Body up to 90 mm long with up to 137 segments. Mid-body segments triannulate; two anterior annuli of about same length, posterior annulus slightly longer. Conical prostomium consisting of about 8-9 rings (fig. 25a). Proboscis with two types of papillae: 1. numerous digitiform papillae with straight, median, longitudinal ridge; 2. isolated, shorter and broader, oval to globular papillae without ridges (figs. 25b, 26). Aileron with pointed triangular base (fig. 25c). First two parapodia uniramous; following parapodia biramous (fig. 25d-l). Two slender triangular to digitiform prechaetal lobes; in anterior parapodia both lobes of about same length, in mid-body notopodial lobe distinctly longer and wider than neuropodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. One shorter, rounded, sometimes blunt triangular postchaetal lobe. Dorsal cirrus distinctly visible from 3rd parapodium (sometimes bulge on 2nd parapodia), oval to globular; inserted - most clearly in anterior part of body - on body wall far above parapodial base. Ventral cirrus slender triangular to digitiform; in anterior parapodia about as long as postchaetal lobe; in mid-body distinctly longer and wider; in posterior parapodia slender; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae absent.

Remarks: MOORE (1911) and CHAMBERLIN (1919b) interpreted the notopodial prechaetal lobes and the ventral cirri as branchiae, but in some of the specimens concerned (e.g. paratype of *Glycera branchiopoda*, ANSP 3077) these structures are not distinctly elongated and the integument is not thin. It is not known whether this is an artifact caused by fixation or due to sexual dimorphism.

Distribution: Pacific coasts of North America; 10-2562 m (fig. 27)

Discussion: The description and drawings of *Glycera branchiopoda* MOORE 1911 agree with the type material.

The holotypes of *Hemipodus mexicanus* CHAMBERLIN 1919 and *Glycera profundi* CHAMBERLIN 1919 have been examined and are referred to *Glycera branchiopoda*. HARTMAN (1942) already suspected that *Hemipodus mexicanus* belongs to the genus *Glycera*. The parapodia are biramous and the notochaetae are simple capillaries, as reported by CHAMBERLIN (1919b).

Glycera sphyrabrancha SCHMARDA 1861

Figs. 28-30

1861 *Glycera sphyrabrancha* SCHMARDA: 96; pl. 30, fig. 240; textfigs. a-c [Locus typicus: Südliche Keys in Jamaica; holotype: NHMW 1001]

1878 *Glycera longipinnis* GRUBE: 182; pl. 8, fig. 9 [Locus typicus: Aibuhit, Philippinen (Palau Islands); holotype: MPUW 286]

?1932 *Glycera sagittariae* – FAUVEL: 127, textfig. 17a-d (non MCINTOSH 1885)

1973b *Glycera asymmetrica* DAY: 47, fig. 6d-g [Locus typicus: Beaufort (North Carolina, U.S.A.); holotype: USNM 43148]

Material examined:

Type material: *Glycera sphyrabrancha*: Jamaica, coral sand; holotype: af/78/170/5.8/3.3 (NHMW 1001) — *Glycera longipinnis*: W Caroline Islands, Palau Islands, Bahaltaub, Aibuhit; holotype: cs/

105/320/5.0/3.5 (MPUW 286) — *Glycera asymmetrica*: U.S.A., North Carolina, Beaufort, 34°34'N 76°25'W, 24.VI.1965, 19 m, fine sand and shells; holotype: cs/67/175/4.0/3.0 (USNM 43148) - 3 paratypes: af/46/91/3.2/2.1; af/36/107/2.9/2.1; af/28/86/3.8/2.2 (USNM 43149)

Additional material: NW Atlantic: U.S.A., Georgia, Sapelo Island, 23.II.1961, 48 ft.; af/78/99/4.5/2.4 (USNM 33382) - Florida, St. Lucie, Hutchinson Island St. 1, 27°21'06"N 80°13'58"W, 5.III.1973, 6.7 m; cs/59/160/5.4/3.5 (USNM 54494) - Hutchinson Island St. 2, 27°21'23"N 80°13'24"W, 2.XI.1972, 10.9 m; cs/31/112/2.6/1.8 (USNM 54495) — Gulf of Mexico: R/V FISH HAWK St. 7121, Florida, Tampa Bay, 1.IV.1901, 11.4 m; af/61/116/6.2/4.0 (USNM 29166) - Florida, MAFLA St. S-2853, 29°18'02"N 84°19'59"W, VIII.1977, 29 m, coarse sand; af/55/114/4.0/2.5 (USNM 89761) — Caribbean Sea: M.Y. ROSAURA 1937 St. 31, 15°54'N 82°13'W, of Gorda Bay, Mosquito Bank, 16.XI.1937, 34 m; af/66/133/6.0/4.2 (BMNH 1941.1.1.263) - Puerto Rico, Magueyes, Parguera, 31.X.1955, 1 ft.; af/63/126/9.3/6.0 (USNM 29164) - Panama, Galeta Island St. 17-3, from Recreation Beach NW from laboratory, 9°24.4'N 79°52.3'W, 22.IV.1971, 0-4.5 ft; af/85/172/3.7/2.2 (USNM Acc. No. 292580 partim) — W Atlantic: Barbados, summer 1918; cs/194/376/7.0/4.8 (USNM 20301) — SE Atlantic: South Africa, False Bay St. FAL.211, 34°07.10'S 18°35.60'E, 9.IX.1953, 21.7 m, sand with shells and rocks; cs/36/152/2.1/1.2; af/31/77/4.4/2.8 (SAM A20470) — Arabian Sea: HMS INVESTIGATOR St. 292, Persian Gulf, 26°20'N 53°54'E, 53 fms.; af/52/114/3.2/1.6 (BMNH 1938.5.7.43-44) — Bay of Bengal: India, Madras Coast, Seven-Pagodas, 5-10 fms; slide (with parapodia) (UCO R/6) - Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — W Pacific: Solomon Islands, Guadalcanal, Komimbo Bay, 20.VIII.1965, low water mark, muddy sand; cs/132/314/4.7/2.8 (BMNH 1970.448) — E Pacific: Panama, Fort Amador, SE side of Isla Perico, St. 26-1, 8°54.9'N 79°31.5'W, 27.IV.1971; af/45/115/2.6/1.7 (USNM Acc. No. 292580 partim)

Diagnosis: Proboscidial papillae mainly digitiform without ridges; ailerons with deeply incised bases; parapodia of mid-body with two prechaetal lobes of about same length; one rounded postchaetal lobe; simple, digitiform branchiae, situated termino-dorsally on parapodia.

Description: Body up to 194 mm long with up to 390 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 11-13 rings (fig. 28a). Proboscis with two types of papillae: 1. numerous digitiform papillae without ridges; 2. isolated, shorter and broader, oval to globular papillae without ridges (figs. 28b, 29). Aileron with deeply incised base (fig. 28c). First two parapodia uniramous; following parapodia biramous (fig. 28d-l). Two slender triangular to digitiform prechaetal lobes; neuropodial lobe usually slightly longer than notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe distinctly shorter than neuropodial one. One shorter, rounded postchaetal lobe. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform; in anterior parapodia about as long as postchaetal lobe; in mid-body distinctly longer and wider; in posterior parapodia slender; in last parapodia about as long as neuropodial prechaetal lobe; situated termino-ventrally on parapodia. Branchiae non-retractile, simple; starting from about 14th parapodium to near posterior end, at first as slight bulge, becoming digitiform from about 25th to 45th parapodium; situated termino-dorsally on parapodia; best developed in mid-body region, extending far beyond prechaetal lobes.

Remarks: AUGENER (1924) described a sub-epitokous female, with longer and slender parapodia and simple capillary chaetae in the neuropodium, but the proboscis is still present.

Distribution: Mainly in tropical seas; intertidal to 250 m (fig. 30)

Discussion: The description and drawings of *Glycera sphyrabrancha* SCHMARDA 1861 are not very detailed, but the holotype shows all characteristics of the taxon.

The holotype of *Glycera longipinnis* GRUBE 1878 has been examined and is referred to *Glycera sphyrabrancha*.

HARTMAN (1959) considered *Glycera sagittariae*, described by FAUVEL (1932) as *Glycera sagittariae* MCINTOSH, as a valid species, since she did not believe that FAUVEL's *Glycera sagittariae* is identical to MCINTOSH's *Glycera sagittariae*. The description and drawings are inaccurate and the slide of the single specimen (UCO R/6) is indeed badly preserved, but the ailerons with deeply incised bases, the digitiform papillae, the rounded postchaetal lobe and the branchiae all resemble *Glycera sphyrabrancha*. This classification is questionable until further examination of material, believed to be located in the ZSI can be carried out.

The description, drawings and the type specimens of *Glycera asymmetrica* DAY 1973 demonstrated that this taxon is a synonym for *Glycera sphyrabrancha*, even though DAY (1973b) interpreted the branchiae as postero-dorsal digitiform lobes.

Glycera guatemalensis BÖGGEMANN & FIEGE 2001
Figs. 31-33

1939 *Glycera lancadivæ* – BERKELEY & BERKELEY: 334 (non SCHMARDA 1861)

2001 *Glycera guatemalensis* BÖGGEMANN & FIEGE: 35, figs. 4, 8g-h, 10 [Locus typicus: San Jose, Guatemala; holotype: USNM 35980]

Material examined:
Type material: *Glycera guatemalensis*: R/Y STRANGER, Guatemala, San José, 4.I.1937, 10 fms; holotype: af/99/138/5.6/3.6 (USNM 35980) - paratype: af/52/127/6.2/3.1 (SMF 9392)

Diagnosis: Proboscidial papillae mainly conical with straight, median, longitudinal ridge; ailerons with deeply incised bases; parapodia of mid-body with long notopodial and shorter neuropodial prechaetal lobes and two shorter, rounded postchaetal lobes; branchiae absent.

Description: Body up to at least 99 mm long with up to at least 138 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-12 rings (fig. 31a). Proboscis with two types of papillae:

1.numerous conical papillae with straight, median, longitudinal ridge; 2. isolated, slightly shorter and broader, oval to globular papillae without ridges (figs. 31b, 32). Aileron with deeply incised base, outer ramus on inner side slightly pointed (fig. 31c). First two parapodia uniramous; following parapodia biramous (fig. 31d-l). Two slender triangular to digitiform prechaetal lobes; in anterior parapodia both lobes of about same length; in mid-body notopodial lobe distinctly longer and wider than neuropodial lobe; structure in posterior parapodia unknown due to incompleteness of specimens. Two shorter, rounded postchaetal lobes; neuropodial lobe often slightly longer than notopodial one. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform; in anterior parapodia only slightly longer than neuropodial postchaetal lobe; in mid-body elongated and about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae absent.

Distribution: Only known from the type locality in Guatemala; 18.3 m (fig. 33)

Discussion: *Glycera guatemalensis* shows some similarities to *Glycera branchiopoda* MOORE 1911, known from the Pacific coast of North America. Both species have the same types of proboscidial papillae, elongated notopodial prechaetal lobes and ventral cirri. However, the ailerons of *Glycera branchiopoda* have pointed triangular bases and parapodia with only one postchaetal lobe. *Glycera sphyrabrancha* SCHMARDA 1861, a species with the same type of papillae and ailerons as *Glycera guatemalensis*, lacks elongated notopodial prechaetal lobes and ventral cirri, has only one postchaetal lobe, and simple, digitiform branchiae situated termino-dorsally, which is in contrast to *Glycera guatemalensis* where branchiae are absent.

Glycera brevicirris GRUBE 1870
Figs. 34-36

1857 *Glycera cirrata* GRUBE: 176 [Locus typicus: St. Croix (Caribbean Sea); syntype: ZMUC-POL-392] partim

1870a *Glycera Martensii* GRUBE: 60 [Locus typicus: Laventuka (Indonesia, Flores Island, Larantuka); holotype: ZMB Verm. 3114 dried, (only parts): ZMB Q. 4323 partim]

1870a *Glycera brevicirris* GRUBE: 61 [Locus typicus: Fundort nicht genau bekannt, Indischer Ocean ?; syntype: ZMB Q. 4304]

?1900 *Glycera fusiformis* FISCHLI: 113; pl. 4, figs. 11-14; pl. 6, figs. 43-44; pl. 7, fig. 65; pl. 8, figs. 82-84 [Locus typicus: Ternate, Molukken; type: presumed lost]

1901 *Glycera abranchiata* TREADWELL: 200, fig. 49 [Locus typicus: Arroyo, Porto Rico; syntypes: USNM 15998]

1902 *Glycera Edwardsi* GRAVIER: pl. 10, figs. 160-162 [Locus typicus: no locality details, GRAVIER (1904): Djibouti; syntypes: MNHN A120]

1904 *Glycera Edwardsi* – GRAVIER: 473 [Locus typicus: Djibouti; syntypes: MNHN A120]

1906 *Glycera Edwardsi* – GRAVIER: 139; pl. 10, figs. 160-162; textfigs. 293-298

1919b *Telake epipolasis* CHAMBERLIN: 346; pl. 63, figs. 4-8; pl. 64, fig. 1 [Locus typicus: Gilbert Islands: off Arhno reef; holotype: USNM 19717]

1943 *Glycera spadix* TREADWELL: 3, figs. 8-11 [Locus typicus: Gulf of Davao, Philippine Islands; holotype: AMNH 3241]

Material examined:

Type material: *Glycera cirrata*: St. Croix, 18.IX.1845; syntype: af/6/40/2.1/1.6 (ZMUC-POL-392) — *Glycera martensii*: Indonesia, Flores Island, Larantuka; 3 parapodia and part of the proboscis (ZMB Q. 4323 partim) — *Glycera brevicirris*: ? Indian Ocean; syntype: af/28.5/103/2.9/1.9 (ZMB Q. 4304) — *Glycera abranchiata*: R/V FISH HAWK, Porto Rico Expedition 1898-99, Arroyo; 2 syntypes: cs/49/162/4.0/2.8; af/37/75/4.4/2.9 (USNM 15998) — *Glycera edwardsi*: Djibouti, 1897; 6 syntypes: cs/80/180/4.1/2.8; cs/68/186/3.0/2.3; cs/55/184/2.9/2.0; cs/43/125/2.9/1.7; af/39/79/3.0/2.0; af/29/80/2.2/1.4 (MNHN A120) — *Telake epipolasis*: USS ALBATROSS St. ?234, Gilbert Islands off Arhno reef, 24.I.1900, surface by night; holotype: af/20/60/2.7/1.6 (USNM 19717) — *Glycera spadix*: Philippine Islands, Gulf of Davao, Mindanao, reef 1 km N of Digos, 18.XI.1936; holotype: cs/66/203/5.0/3.5 (AMNH 3241)

Additional material: NW Atlantic: U.S.A., North Carolina, off Beaufort, 10 m, on coral; af/25/113/2.2/1.4 (USNM 51113) - North Carolina, Wrightsville Beach, Banks Channel, IV.1972, intertidal, muddy sand with shells; af/32/83/3.0/1.7 (USNM 52965) - off North Carolina St. MSO4, 33°32.18'N 77°25.00'W, 13.VIII.1980, 30 m; cs/22/101/1.9/1.3 (USNM 108000) - off South Carolina St. ISO1, 32°29.36'N 79°42.30'W, 22.I.1980, 19 m; cs/58/147/4.2/2.8; af/8/50/1.7/1.0 (USNM 108001) - Bermuda, Nonsuch Island, 1.IX.1930; af/18/58/2.0/1.2 (AMNH 2400 partim) - Bahamas, North Bimini St. 1153, 10.VIII.1949, Plankton night catch, surface; cs/17/77/1.5/1.0; cs/15/79/1.2/0.8; cs/8/45/1.2/0.8; af/15/63/1.8/0.8; af/11/55/2.1/1.0; af/11/50/1.4/0.8; af/11/49/2.0/1.0; af/10/52/1.6/0.7; af/10/51/1.9/0.8; af/10/44/2.0/0.9; af/10/42/1.8/0.8; af/9/50/1.7/0.7; af/9/49/1.4/0.6; af/9/48/1.6/0.7; af/9/47/1.8/0.8; af/9/46/1.7/0.8; af/9/45/2.0/0.8; af/9/44/1.6/0.7; af/9/43/1.5/0.7; af/9/41/1.5/0.9; af/9/40/2.1/1.1; af/8/45/1.6/0.7; af/8/44/1.5/0.7; af/8/43/1.3/0.6; af/8/42/1.8/0.8; af/8/42/1.7/0.7; af/8/41/1.3/0.6; af/8/39/1.6/0.7; af/8/36/1.6/0.7; af/7/40/1.6/0.7; af/7/36/1.7/0.7; af/6/41/1.6/0.7; af/6/39/1.4/0.6; af/6/39/1.3/0.6; af/6/38/1.5/0.6; af/6/38/1.4/0.6; af/5/34/1.3/0.6 (ZMA, epitokous) - North Bimini St. 1153, 10.VIII.1949, Plankton night catch, surface; af/14/62/1.6/0.8; af/13/39/2.2/1.2; af/12/54/1.5/0.7 (SMF 8668, epitokous) - Bimini, near surface; af/94/142/3.6/2.0; af/20/59/2.5/1.2; af/18/56/2.2/1.6; af/12/55/2.3/1.7 (USNM 24533, epitokous) - Bimini; af/16/50/2.0/1.4 (USNM 24536) - Bahamas, Andros Island, III.-IV.1908; af/21/53/3.0/2.0 (AMNH 2339) - Andros Island, III.-IV.1908; cs/76/185/4.1/2.8; cs/40/154/3.2/2.1 (AMNH 2340) — W Atlantic: USS BLAKE 1878-79 St. 276, Barbados, 94 fms; af/24/76/3.9/2.5 (HZM PE-611) - Barbados, summer 1918; cs/45/151/4.0/2.8 (USNM 20278) - Barbados, 12.IV.1974, 2 ft, coral rubble and fine sand; cs/50/178/4.0/2.0 (USNM 51546) - Barbados St. BAR-1, Lawrence Gap, Christ Church, beach and foreshore from Andres-on-Sea Hotel, 13°03'N 59°32'W, 19.VII.1967; af/25/66/4.2/2.8 (USNM Acc. No. 269587) - Barbados St. 1442, Alleynes Bay off Holetown, St. James, about 800 m offshore, 19.II.1964, 90-100 m, muddy sand with shell debris; cs/9/48/1.1/0.7; af/8/34/1.3/0.8 (ZMA) - Barbados St. 1553, Conset Bay, St. John, 7.VII.1967, 0-0.25 m, sandy shore; cs/24/86/2.1/1.3 (ZMA) — Gulf of Mexico: U.S.A., Florida, Big Pine Key, 12.VIII.1973, 3 ft., sandflat; cs/65/161/5.0/3.0; cs/52/143/4.6/2.9 (USNM 52045) - off Florida, SOFLA St. 22, 25°17.11'N 83°02.04'W, XI.1980, 53 m, fine sand; af/7/49/1.0/0.6 (USNM 89753) - off Florida,

SOFLA St. 16, 25°45.42'N 83°11.04'W, VIII.1981, 54 m, fine sand; af/14/55/2.0/1.3 (USNM 89754) - Florida, off Charlotte Harbor, MAFLA St. 2104, 26°25'00"N 83°23'01"W, V.1975, 53 m, coarse sand; af/17/60/0.9/0.5 (USNM 89742) - Florida, off St. Petersburg, MAFLA St. 2211, 27°56'30"N 83°53'00"W, VI.1976, 43 m, coarse sand; af/18/66/1.0/0.6 (USNM 89752) - Texas, Hospital Rock, STOCS St. HR4, 27°33'02"N 96°29'03"W, Spring 1976, 76 m, silty clay; af/9/43/1.1/0.7 (USNM 89750) - Hospital Rock, STOCS St. HR1, 27°32'05"N 96°28'19"W, III.1976, 75 m; af/21/59/2.4/1.6 (USNM 89748) - Hospital Rock, STOCS St. HR3, 27°32'05"N 96°27'35"W, IV.1976, 81 m; af/5.5/27/1.0/0.6 (USNM 89749) - Texas, Southern Bank, STOCS St. SB1, 27°26'49"N 96°31'18"W, III.1976, 81 m; cs/19/78/1.8/1.0 (USNM 89747) - Southern Bank, STOCS St. SB3, 27°26'06"N 96°31'47"W, IV.1976, 82 m; af/14/61/1.6/1.0 (USNM 89751) - R/V JUSTO SIERRA, Mexico, Imca IV St. 6, 20°32.0'N 96°57.3'W, 28.IX.1989, 31.9 m; cs/27/104/2.4/1.4; cs/26/106/2.3/1.4; cs/26/102/2.4/1.3; cs/21/86/2.2/1.3; af/14/60/1.5/0.8 (UNAM) - R/V JUSTO SIERRA, Imca IV St. 41, 19°43.1'N 91°45.6'W, 3.X.1989, 42.4 m; cs/32/106/2.1/1.3; af/14/72/1.2/0.6 (UNAM) — Caribbean Sea: Mexico, Quitana Roo St. 52-60, Bahia Ascension, E of Allen Point, just behind center of Nicchehabin Reef, 10.IV.1960, 1-5 ft., on coral and under coral pieces on bottom; cs/25/96/2.2/1.5 (USNM Acc. No. 229190) - Cayman Islands, Grand Cayman, 30.I.1974, sand; af/144/213/5.4/4.2 (BMNH) - Grand Cayman, 1974; cs/38/131/2.8/2.0 (BMNH) - Jamaica, 1904; cs/33/117/2.0/1.1 (SMF 9421) - R/V FISH HAWK Puerto Rico Exp. 1898-99 St. 6055, NE Point de Bruguen Light House, off Aguadilla, 18.I.1899, 137 fms, sand with mud and shells; af/39/119/3.8/2.5; af/34/101/3.9/2.8 (USNM 16061) - R/V FISH HAWK Puerto Rico Exp. 1898-99 St. 6066, E Point del Algarrobo St., Mayaguez Harbor, off Point Jiguero Light Station, 20.I.1899, 16-17 fms, mud and sand; af/14/49/2.2/1.3 (USNM 16060) - Puerto Rico, Mayagüez St. N-1, near Punta Guanajibo, VIII.1963, 10 ft.; cs/46/154/3.8/2.4; af/5/25/2.3/1.6 (USNM 81700) - R/V FISH HAWK Puerto Rico Exp. 1898-99, Port Real; af/19/62/3.3/2.2 (USNM 16059) - R/V FISH HAWK Puerto Rico Exp. 1898-99, Ensenada Honda, Culebra; cs/16/91/2.2/1.5 (USNM 15999) - Puerto Rico, Guayanilla Bay St. 10, 11.II.1976; af/25/82/3.8/2.5 (USNM 54239) - Guayanilla Bay St. 1, 18.III.1976, 3 ft.; cs/53/166/4.5/3.0; af/22/71/2.1/1.5 (USNM 54921) - Saba St. 1705, Fort Bay, Fort Bay Pier, 7.VII.1973, 0-1 m; cs/19/87/2.1/1.3; af/12/50/1.8/1.2; af/10/40/2.6/1.9 (ZMA) - Sint Eustatius St. 1117, Downtown near Billy Gut, 13.VII.1949, 0-0.5 m, sandy shore; cs/14/66/1.4/1.0; cs/12.5/65/1.1/0.7 (ZMA) - Sint Eustatius St. 1118, Billy Gut, 13.VII.1949, 0.5-1.5 m, sandy shore; af/7/42/1.2/0.8 (ZMA) - Sint Eustatius St. 1119, Tumble Down Dick Bay, S part, 10.VII.1949, 0.25-0.5 m, rocky shore with sand; af/14/48/2.0/1.3 (ZMA) - Antigua, English Harbour, Pillars of Hercules, summer 1918; cs/68/155/4.0/2.8; cs/51/152/3.4/2.6 (USNM 20266) - USS BLAKE 1878-79 St. 175, Dominica, 611 fms; af/10/64/2.0/1.0 (MCZ 2294) - Bonaire St. 1056Aa, Paloe Lechi, 24.II.1949, 0-0.25 m, rocky beach; cs/9/57/1.1/0.7 (ZMA) - Bonaire St. 1057a, Kralendijk, near Pasanggrahan, 14-16 and 19-20.IX.1930, 0-1 m, rocky beach; cs/9/62/1.0/0.6; cs/6/43/0.6/0.4; cs/5/31/0.5/0.3 (ZMA) - Bonaire St. 1057C, Kralendijk, near Pasanggrahan, 20.IX.1948, 0.5-1.5 m, rocky beach with some sand; cs/12/56/1.4/1.0; cs/5/37/0.5/0.3; cs/5/33/0.7/0.5; af/19/71/1.8/1.1 (ZMA) - Bonaire St. 1058b, near De Hoop, S of Kralendijk, 6 and 11.XI.1930, 0-1.5 m, sandy reef; cs/16/72/1.2/0.8; af/60/99/2.9/1.6 (ZMA) - Bonaire St. 1058C, near De Hoop, S of Kralendijk, 10.IX.1948, 1-3 m, sandy reef; cs/9.5/48/1.1/0.7 (ZMA) - Bonaire St. 1059A, Punt Vierkant, N side, 9.IX.1948, 0.25-1 m, with coarse rock debris; cs/13/76/1.2/0.7; af/8/44/1.2/0.7; af/5/34/1.2/0.7 (ZMA) - Bonaire St. 1068a, Lac, Boca behind reef, 1.X.1948, 1-2 m, sandy reef; af/15/60/2.0/1.4; af/14/56/1.5/1.0; af/9/34/1.4/1.0 (ZMA) - Bonaire St. 1068a, Lac, Boca behind reef, 1.X.1948, 1-2 m, sandy reef; af/16/53/2.6/1.8; af/14/54/2.0/1.3 (SMF 8662) - Bonaire St. 1373A, Lac, N of Sorobon Point, 17.IV.1955, 0.25-0.5 m; cs/20/102/2.5/1.4 (ZMA) - Bonaire St. 1562, Lac, Boca behind reef, Bao di Dam, 500 m SW of cai, 25.VIII.1967, 1 m; cs/32/135/2.3/1.3; af/12/65/1.4/1.0; af/5/40/1.0/0.5 (ZMA) - Bonaire St. 1564, Lac, Awa Blancu, 400 m NE of Sorobon Point, 25.VIII.1967, 1-2.5 m, sandy slope; cs/20/97/1.2/0.7; cs/13/78/1.5/1.0; cs/6/38/1.0/0.6 (ZMA) - Bonaire St. 1564, Lac, Awa Blancu, 400 m NE of Sorobon Point, 25.VIII.1967, 1-2.5 m, sandy slope; cs/17/64/1.3/0.7; af/5/35/1.2/0.8 (SMF 8663) - Bonaire St. 1565, Lac, Secu di Sorobon, 100 m N of Sorobon Point, 21.8. 1967, 0.25-1 m, sandy; cs/14/70/1.7/1.0; cs/11/68/1.2/0.8; af/12/54/1.8/1.2; af/6/40/1.1/0.6 (ZMA) - Bonaire St. 1566, Lac, Secu di Sorobon, 250 m N of Sorobon Point, 21.VIII.1967, 0.1-0.5 m; cs/25/99/2.2/1.4; cs/11/62/1.1/0.7; cs/10/58/1.1/0.7; cs/9/49/1.4/1.0; cs/7/52/0.8/0.5; af/29/77/2.2/1.3; af/9/44/1.1/0.7; af/5/37/0.6/0.4 (ZMA) - Bonaire St. 1566, Lac, Secu di Sorobon, 250 m N of Sorobon Point, 21.VIII.1967, 0.1-0.5 m; af/9/42/1.5/1.0; af/8/43/1.5/1.0; af/6/47/0.8/0.4 (SMF 8664) - Bonaire St. 1567, Lac, Binnenklip, 1 km WSW of Cai, 24.VIII.1967, 3 m, sand; cs/20/106/1.4/0.9; cs/19/70/1.5/1.0; cs/11/71/1.1/0.7; cs/10/70/1.0/0.5; af/18/63/3.0/1.6 (ZMA) - Bonaire St. 1567, Lac, Binnenklip, 1 km WSW of Cai, 24.VIII.1967, 3 m, sand; af/16/86/2.1/1.5 (SMF 8665) - Bonaire St. 1568, Lac, Binnenklip, 1 km WSW of Cai, 24.VIII.1967, 2 m, sand on limestone; cs/9.5/50/0.9/0.6; af/10/63/1.2/0.8 (ZMA) - Bonaire St. 1568A, Lac, Binnenklip, 10.III.1970, 2.5 m, sand on limestone; af/9.5/48/1.5/1.0 (ZMA) - Bonaire St. 1569, Lac, 300 m E of Palu Calbas, 11.VIII.1967, 2 m, sandy; cs/14/69/1.2/0.8; cs/6/41/0.9/0.5 (ZMA) - Bonaire St. 1570, Lac, 1 km W of Cai, 11.VIII.1967, 3 m, sand; af/12/48/1.8/1.1; af/6/40/0.5/0.3 (ZMA) - Bonaire St. 1594, Lac, Playa Mangel Altu, 600 m W of Sorobon Point, 23.VIII.1967, 0.5-1 m, sandy; cs/16/100/1.6/1.2; af/61/145/4.2/2.4 (ZMA) - Bonaire St. 1646, Paloe Lechi, N of Salinja, at Hotel Bonaire, 25.IX.1968, 0-0.5 m, beachrock with tide pools; cs/27/97/2.4/1.8; cs/25/101/2.2/1.7; cs/25/90/3.2/2.1; cs/22/83/2.2/1.5; cs/21/88/2.1/1.5; cs/20/88/1.8/1.2; cs/19/82/1.5/1.1; cs/19/80/2.0/1.3; cs/18/83/1.3/0.9; cs/18/82/1.4/1.0; cs/18/78/1.3/1.0; cs/18/77/1.8/1.2; cs/18/69/1.5/1.0; cs/17/71/1.1/0.8; cs/15/82/1.3/1.0; cs/15/77/1.8/1.2; cs/14/76/1.1/0.8; cs/14/66/1.4/1.0; cs/14/64/1.0/0.7; cs/13/79/1.1/0.8; cs/13/71/1.4/0.9; cs/12/63/1.4/1.0; cs/12/61/1.0/0.7; cs/12/55/1.0/0.6; cs/11/66/1.1/0.8; cs/11/54/1.4/0.9; cs/10/53/1.1/0.8; cs/10/45/1.2/0.8; cs/9/54/0.9/0.6; cs/9/51/0.8/0.5; cs/9/49/0.8/0.5; cs/8/54/0.9/0.6; cs/8/53/0.8/0.5; cs/8/53/0.8/0.5; cs/8/49/0.7/0.5; cs/8/47/1.0/0.7; cs/8/43/0.9/0.6; cs/7/40/0.9/0.6; cs/5/37/0.8/0.5; cs/5/32/0.5/0.3; af/30/98/2.8/2.2; af/25/89/2.1/1.6; af/20/76/2.0/1.4; af/19/80/2.6/2.0; af/17/73/2.0/1.3; af/17/65/2.0/1.5; af/14/61/2.2/1.7; af/13/53/1.8/1.2; af/12/55/1.4/1.0; af/12/55/1.1/0.8; af/11/51/1.1/0.8; af/11/49/0.9/0.6; af/10/58/0.9/0.6; af/10/57/1.1/0.8; af/10/51/1.4/1.0; af/10/47/2.2/1.6; af/9/42/1.2/0.8; af/8/39/1.0/0.7; af/7/47/0.9/0.6; af/6/31/1.4/1.0; af/4.5/26/0.9/0.6; af/4/24/0.9/0.6; af/3/24/1.0/0.6 (ZMA) - Bonaire St. 1646, Paloe Lechi, N of Salinja, at Hotel Bonaire, 25.IX.1968, 0-0.5 m, beachrock with tide pools; cs/24/93/1.9/1.3; cs/20/78/2.4/1.8; af/23/77/2.7/2.1; af/20/77/1.6/1.1; af/10/47/1.6/1.0; af/6/37/0.8/0.5 (SMF 8666) - Bonaire St. 1652, Lac, Awa Blancu, 10.III.1970, 1 m, sandflat; af/7/36/0.9/0.4 (ZMA) - Bonaire St. 75-52, Lac, Sorobon, 50-60 cm; af/10/54/1.1/0.7 (ZMA) - Klein Bonaire St. 1049a, E coast at Landing, 17.10. and 8.XI.1930, 0-1 m, sandy reef debris; cs/117/191/3.8/2.0 (ZMA) - Klein Bonaire St. 1049B, E coast at Landing, 13.IX.1948, 0-1.5 m, reef debris on sandy beach; cs/6/56/0.8/0.5 (ZMA) - Klein Bonaire St. 1369, N coast, W, 30.III.1955, 0-1 m, rocky beach with sandy reef; cs/16/74/1.6/1.0; af/10/38/1.2/0.8; af/4.5/26/0.8/0.4 (ZMA) - Klein Bonaire St. 1371, N coast, ENE, 13.IV.1955, 0-0.5 m, limestone flat with pools and fissures with sand; cs/31/109/3.0/1.8; af/60/128/4.0/2.6; af/15/59/1.7/1.0 (ZMA[4]) - Curaçao St. 1018, Knip Baai, N side, 6.II.1949, 0-1.5 m, steep limestone cliff; cs/18.5/79/1.5/1.0 (ZMA) - Curaçao St. 1019, Plaja Djerimi, N corner, 11.XII.1948, 0-1.5 m, rocky shore with sand; af/28/122/3.7/2.3 (ZMA) - Curaçao St. 1020A, Boca Lagoen, 13.XI.1948, 0-0.5 m, rocky beach with small tide pools; cs/9/54/1.0/0.6 (ZMA) - Curaçao St. 1021, St. Kruis Baai, S side, 23-24 and 26.IV.1930, 0-0.5 m, rocky shore with tide pools; af/17/56/2.0/1.2 (ZMA) - Curaçao St. 1023, Plaja Hoeloe, 28.X.1948, 0.5-1.5 m, sandy reef; af/8/41/1.4/0.8 (ZMA) - Curaçao St. 1455A, Piscadera Baai, Boca Piscadera, W part, 2.I.1964, 3.5 m, muddy sand; cs/22/101/2.2/1.3 (ZMA) - Curaçao St. 1458, Piscadera Baai, Boca Piscadera, NW part, 5.I.1964, 1-1.5 m, muddy sand with rock debris; cs/14/81/1.5/1.0; cs/10/64/1.3/0.8; cs/6/60/1.1/0.7; af/11/50/1.2/0.8 (ZMA) - Curaçao St. 1458, Piscadera Baai, Boca Piscadera, NW part, 5.I.1964, 1-1.5 m, muddy sand with rock debris; cs/16/73/1.1/0.7; cs/6/51/0.8/0.4 (SMF 8667) - Curaçao St. 1460, Piscadera Baai, Boca Stroink, W, 14.XII.1963, 0-0.5 m, sandy; cs/41/135/3.9/2.3 (ZMA) - Curaçao St. 1463, Piscadera Baai,

Boca Stroink, W side, N of water-pipe, 14.XII.1963, 0-1 m, some beachrock with muddy sand; cs/20/100/2.1/1.3 (ZMA) - Curaçao St. 1469a, Piscadera Baai, Binnenbaai, W side, 27.VII.1973, 0-1 m, muddy rock debris; af/15/72/1.8/1.2 (ZMA) - Curaçao St. 1671A, Piscadera Baai, Binnenbaai, SE part, near Carmabi, 30.III.1970, 1-1.5 m, sandy mud with rock debris; cs/16/83/1.1/0.6; cs/2.5/21/0.4/0.3; af/11/47/1.2/0.8 (ZMA) - Curaçao St. 1708, Piscadera Baai, Binnenbaai, E shore, N of destroyed area, 27.VII.1973, 0-1 m, rocky shore with some mud; cs/22/108/1.8/1.1; cs/20/104/1.5/0.9 (ZMA) - Curaçao St. 1708A, Piscadera Baai, Binnenbaai, E shore, N of destroyed area, 27.VII.1973, 1-1.5 m, rocky bottom with mud; af/19/54/1.6/1.0 (ZMA) - Aruba St. 1006b, Bucuti reef, 6.V.1955, 0-0.75 m, muddy sand; cs/21/102/2.3/1.7 (ZMA) - Panama, Playa Langosta, 4.XII.1996, littoral; cs/77/188/3.2/1.9; cs/38/133/2.2/1.4 (SMF 9422) - Panama, Galeta Island St. 17-3, from Recreation Beach NW from laboratory, 9°24.4'N 79°52.3'W, 22.IV.1971, 0-4.5 ft.; af/45/121/3.9/2.4 (USNM Acc. No. 292580 partim) - Galeta Reef, 17.IV.1971; cs/14/87/1.5/1.0 (USNM 66010) - Galeta Reef, 23.IV.1971; cs/77/168/3.2/2.3 (USNM 66011) - Galeta Reef, 17.VIII.1972; af/36/100/2.8/1.9 (USNM 66013) — Red Sea: Gulf of Elat, E49/5; cs/18/92/1.5/0.8 (HUJ partim) - Sudan, Sanganeb Atoll, south jetty, W-side, 6.IV.1991, 1 m; cs/34/128/3.6/2.2; cs/34/123/2.6/1.7 (SMF 9423) - Sanganeb Atoll, south jetty, 25.IX.1992, 50 m; af/16/77/1.1/0.6 (SMF 9424) - Sanganeb Atoll, south jetty, 27.IX.1992, 30 m; cs/7/50/1.2/0.8; af/7/43/1.3/0.8 (SMF 9425) - Sanganeb Atoll, south jetty, 29.IX.1992, 12 m; cs/5.5/35/0.8/0.5 (SMF 9426) - Sanganeb Atoll, south jetty, 2.X.1992, 40 m; cs/6.5/40/0.9/0.5 (SMF 9427) - Sanganeb Atoll, T 3, 9.IV.1991, 12 m; af/6/30/1.2/0.7 (SMF 9428) - Sanganeb Atoll, TQ 1, 1.X.1992, 50 m; cs/14/90/1.2/0.7; cs/13/80/1.0/0.6 (SMF 9429) - Sanganeb Atoll, TQ 2, 19.IX.1992, 10-15 m; af/21/53/2.8/2.0 (SMF 9430) — W Indian Ocean: Madagascar, Nosy Mitsio, Banc du Leven St. 14, 12°36.00'S 48°18.00'E, 7.VI.1969, 80 m; af/40/72/5.8/4.2; af/31/91/3.0/2.0; af/13/47/1.5/0.9 (SMF 9431) - Nosy Iranja, Canyon Sud St. 1, 13°36.00'S 47°50.00'E, 26.II.1968, 62 m; af/11/52/2.0/1.3 (SMF 9432) - Banc Pracel, near Chesterfield Islands St. 8, 16°21.00'S 43°50.30'E, 9.IV.1970, 35 m, sand; af/17/55/2.4/1.5 (SMF 9433) — Arabian Sea: India, Lakshadweep, Agatti Island, 27.XII.1979; af/40/113/3.5/2.0 (ZSI An 1289/1) - Lakshadweep, Kavaratti Island, 30.V.1985; af/22/65/3.0/1.7 (ZSI) - Lakshadweep, Minicoy Island, 12.XII.1997; af/20/60/2.1/1.3 (ZSI) — Bay of Bengal: Sri Lanka, corals; cs/92/181/4.9/3.5 (HZM V-1091) - Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — E Indian Ocean: R/V TE VEGA St. 108, Indonesia, Sanding Island, Pulo Stupai, 3°26'S 100°40'E, 5.XII.1963; af/16/73/1.8/1.2 (USNM 45304) — South China Sea: China, Hainan, St. 6154, 28.XI.1959, 34 m; af/36/91/3.2/2.3 (SMF 9434) — NW Pacifik: Japan, Ogasawara Islands, Chichijima, VII.1999, shallow water, among dead coral; af/51/120/3.6/2.3; af/26/76/1.7/1.0 (CBM) — W Pacific: USS ALBATROSS, Philippine Islands, Ticao Island, San Miguel Harbor; af/15/65/2.0/1.0 (USNM 19001, epitokous) - USS ALBATROSS St. 5149, Philippine Islands, Sulu Archipelago, Tapul group, E of Lapac Island, 5°33'N 120°42'10"E, 18.II.1908, 10 fms, coral and shells; cs/26/99/2.2/1.4 (USNM 19002) - Papua New Guinea, Bismarck Sea, Madang, Nagada Harbour, Jais Aben Resort, 5°09.30'S 145°48'E, 23.VIII.1993, 0.5 m; af/21/85/2.3/1.7 (USNM 168384) - Madang, Gozem Island, 5°09.30'S 145°48'E, 7.IX.1993, 12 m; cs/48/134/2.7/1.4 (USNM 168389) - Solomon Islands, New Georgia Group, Matiu Island, 28.VIII.1965, mid-tide level, silty sand; cs/116/239/6.2/4.5; cs/38/142/3.7/2.4 (BMNH 1970.434) - Solomon Islands, Guadalcanal, Fintry Point, 10.X.1965, above mid-tide level, silty sand with shell gravel; cs/29/136/2.5/1.8 (BMNH 1970.419 partim) - Guadalcanal, Maraunibina Island, 20.IX.1965, mid-tide level, sand with shell gravel; cs/109/230/6.2/4.6; cs/25/112/2.5/1.7 (BMNH 1970.436) - New Caledonia, Ile des Pins, 1928; cs/29/121/2.3/1.4 (MNHN A120) - Marshall Islands, Eniwetok Atoll, Bogombogu Is., 2.VII.1957, intertidal, sand; cs/43/152/4.3/2.8 (USNM 29889) - Marshall Islands, Majuro Atoll, Uliga Island St. E-59, 7°06'N 171°23'E, 30.VIII.1956; cs/37/152/3.3/2.6; cs/22/96/2.0/1.4; cs/6/49/0.7/0.4; af/12/71/1.2/0.8 (USNM 118607) - Micronesia, Ifalik Atoll, S end of Falarik Islet, 29.IX.1953, intertidal; cs/12/85/1.4/1.0 (USNM 299846) — NE Pacific: R/V EL PUMA, Mexico, Gulf of California, Cortés II St. 34, 30°11.5'N 114°31.7'W, 15.III.1985, 32.9 m; af/26/87/2.4/1.3 (UNAM) - Cortés II St. 3, 25°02.4'N 108°31.7'W, 10.III.1985, 32 m; af/13/56/1.6/0.8 (UNAM) — E Pacific: Costa Rica, Gulf of Nicoya, 9°54.55'N 84°45.15'W, 11.VII.1980, 20 m; af/22/75/3.0/2.2 (USNM 80053) - Gulf of Nicoya St. 31-2, 9°44.00'N 84°59.25'W, 9.VII.1980, 22 m; af/32/91/2.0/1.2 (USNM 79986) - Panama, Venado Beach, St. 80-2, 19.III.1972, about 3.5 ft., muddy sand; cs/22/102/2.1/1.5 (USNM Acc. No. 292580 partim) - Panama, Farfan Beach, St. 134-2, sieving on slope of canal channel, 6.IV.1973; cs/57/196/3.3/2.2; cs/50/172/3.0/2.0; cs/45/163/3.0/2.0; cs/44/173/3.0/2.2; cs/39/148/2.6/1.8; cs/37/153/3.1/2.0; cs/37/150/2.6/1.8; cs/36/148/3.0/2.1; cs/34/136/2.8/1.9; cs/31/141/2.5/1.8; cs/31/118/3.2/2.2; cs/30/148/2.3/1.8; cs/27/124/2.1/1.4; cs/25/124/1.9/1.2; cs/25/123/2.0/1.3; cs/24/117/1.8/1.3; cs/21/127/2.2/1.5; cs/17/109/1.6/1.0; cs/17/102/1.5/1.0; cs/13/82/1.4/1.0; af/35/135/2.8/1.9; af/25/117/2.3/1.5; af/17/68/2.9/2.0; af/17/62/2.9/2.0; af/17/57/2.3/1.5; af/13/53/2.2/1.5 (USNM Acc. No. 292580) - Farfan Beach, St. 134-3, sieving on flat adjacent to channel, 6.IV.1973, intertidal; cs/36/120/2.9/2.0 (USNM Acc. No. 292580 partim) - Farfan Flat, St. 165-2, sievings from flats about half way from shore to canal near isolated large rock, 12.XI.1973, intertidal; af/39/127/2.5/1.5 (USNM Acc. No. 292580) - Farfan Flat, St. 85-4, 14.IV.1972, intertidal, muddy sand to coarse sand; cs/33/210/4.0/2.7 (USNM Acc. No. 292580) - Panama, Fort Amador, SE side of Isla Perico, St. 26-1, 8°54.9'N 79°31.5'W, 27.IV.1971, intertidal; cs/20/105/1.3/1.0 (USNM Acc. No. 292580 partim) - Panama, Whorehouse Reef, St. 133-4, 5.IV.1973, intertidal; af/51/138/3.1/2.0 (USNM Acc. No. 292580) - USS ALBATROSS St. 2792, Ecuador, W of Manta Bay, 00°37'S 81°00'W, 2.III.1988, 401 fms, green mud; af/17/58/3.3/2.0 (USNM)

Diagnosis: Proboscidial papillae mainly digitiform with about 6-20 ridges; ailerons with deeply incised bases; parapodia of mid-body with two short, rounded postchaetal lobes; branchiae absent.

Description: Body up to 144 mm long with up to 239 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-13 rings (fig. 34a). Proboscis with two types of papillae: 1. numerous digitiform papillae with about 6-20 ridges; ridges U-shaped basally and V-shaped apically; 2. isolated, slightly shorter and broader, conical papillae with more or less distinctly straight, median, longitudinal ridge (figs. 34b, 35). Aileron with deeply incised base (fig. 34c). First two parapodia uniramous; following parapodia biramous (fig. 34d-l). Two slender triangular to digitiform prechaetal lobes; neuropodial lobe usually slightly longer and wider than notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe distinctly shorter than neuropodial one. Two shorter, rounded, postchaetal lobes. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae absent.

Remarks: A few specimens with some indistinct ridges on the conical proboscidial papillae. Epitokous stages (e.g. *Telake epipolasis*, USNM 19717) with abruptly enlarged parapodia (from ca. 33rd to 41st parapodium); proboscis absent; with numerous elongated chaetae; in the posterior part mostly simple capillaries and only a few compound chaetae.

Distribution: West and east Atlantic, Gulf of Mexico, Caribbean Sea, Red Sea, Indian Ocean, Indo-Pacific, Central Pacific Basin, east Pacific coasts; intertidal to 1118 m (fig. 36)

Discussion: Originally there were two syntypes of *Glycera cirrata* GRUBE 1857, but only the now lost specimen from Rio de Janeiro corresponded with the description (AUGENER 1925b) and was later believed to be the same as *Glycera americana* (AUGENER 1934). The other syntype from St. Croix is quite different and should be referred to *Glycera brevicirris*.

The descriptions of GRUBE's (1870a) *Glycera martensii* and *Glycera brevicirris* predominantly agree with the material from the ZMB. Both taxa are similar, but the holotype of *Glycera martensii* from Laventuka (= Larantuka) was dried and only a few parapodia and a part of the proboscis are preserved. For this reason it seems to be better to use the name *Glycera brevicirris* for the taxon, even if the locus typicus is not exactly known.

The type material of *Glycera fusiformis* FISCHLI 1900 cannot be located, but the description and drawings show that this taxon is probably a synonym for *Glycera brevicirris*. FISCHLI (1900) reported no ridges on the digitiform proboscidial papillae (pl. VIII, fig. 84), but they may have been overlooked. The dorsal cirri are inserted on the body wall slightly above the parapodial base (pl. IV, fig. 14), which is typical for *Glycera brevicirris*.

The type specimens of *Glycera abranchiata* TREADWELL 1901, *Glycera edwardsi* GRAVIER 1902, *Telake epipolasis* CHAMBERLIN 1919 and *Glycera spadix* TREADWELL 1943 have been examined and are believed to be identical to *Glycera brevicirris*. *Telake epipolasis* represents an epitokous stage.

Glycera tesselata GRUBE 1863
Figs. 37-39

1863 *Glycera tesselata* GRUBE: 41; pl. 4, figs. 4, 4a [Locus typicus: Lussin piccolo., Neresine bei Osero (Croatia); syntypes: ZMB Q. 4339]

1919b *Glycera fundicola* CHAMBERLIN: 352 [Locus typicus: Peru: 111 miles N.W. of Aguja Point. Sta. 4651 (lat. 5°42'S., long. 83°W.); holotype: USNM 19361]

?1947 *Glycera tesselata* var. *minor* LA GRECA: 277, figs. 10-11 [Locus typicus: Benda Palumbo, Gaiola (Italy); type: presumed lost]

?1975 *Glycera* sp. B. WU, SHEN & CHEN: 80; pl. 5, figs. 1-6 [Yong-xing Island, Xisha Islands (China)]

?1994 *Glycera papillosa* var. *nigticans* Q. WU: [Locus typicus: ?, WU et al. (1975): Yong-xing Island, Xisha Islands (China); type: ?]

Material examined:

Type material: *Glycera tesselata*: Croatia, Neresine, Lussin Piccolo; 2 syntypes: cs/13/71/2.3/1.8; af/15/64/2.1/1.7 (ZMB Q. 4339) — *Glycera fundicola*: USS ALBATROSS St. 4651, Peru, 111 miles NW of Aguja Point, 5°42'S 83°W, 11.XI.1904, 2222 fms, fine sticky gray mud; holotype: af(af+mf)/54(32+22)/88(57+31)/5.7/4.2 (USNM 19361)

Additional material: NW Atlantic: U.S.A., off Georgia St. 5H, 30°57'N 79°58'W, 17.V.1977, 183 m; af/10/34/1.6/1.2 (USNM 59125) — Gulf of Mexico: R/V JUSTO SIERRA, Mexico, Imca II St. 77, 19°19.1'N 92°29.7'W, 27.IX.1988; af/9/29/2.0/1.4 (UNAM) — Mediterranean Sea: Spain, Ibiza, 28.VII.1987, 16 m; af/6/35/1.0/0.6 (SMF 9393) - France, Banyuls-sur-Mer, 7.X.1993, coralligene; cs/4/26/0.8/0.5; af/5/36/0.9/0.6 (SMF 9394) - Banyuls-sur-Mer, Harbour, 21.VI.1994, 2-5 m; cs/11/54/1.4/1.0 (SMF 9395) - Banyuls-sur-Mer, IX.1994, coralligene; cs/18/70/2.2/1.3; cs/15/69/2.4/1.5 (SMF 9396) - Banyuls-sur-Mer, 12.X.1995, 24 m, coralligene; af/11/42/2.5/1.7 (SMF 9397) - Banyuls-sur-Mer, 7.III.1997, 4 m, *Posidonia*; cs/13/65/1.8/1.0 (SMF 9398) - Banyuls-sur-Mer, 12.III.1997, 5 m, *Posidonia*; cs/20/70/2.0/1.2; cs/15/64/1.8/1.0 (SMF 9399) - Banyuls-sur-Mer, 12.III.1997, 5 m, *Posidonia*; af/18/54/1.8/1.0; af/10/47/1.3/0.8 (SMF 9400) - Banyuls-sur-Mer, 10.IX.1997, 10 m, *Posidonia*; cs/20/71/2.4/1.7 (SMF 9401) - Gulf of Lion, S of Ile de Maire, St. 129, 15.VI.1950, 40 m, sandy mud; af/12/46/1.9/1.3; af/7/31/1.4/1.0 (SMF 9402) - Marseille, Cape Caveau, 28.V.1971, coralligene; cs/26/77/3.4/2.4; cs/13/62/1.3/1.0 (SMF 9403) - R/V GYF St. 371, Marseille, 31.VIII.1953; cs/14/53/1.4/1.0; af/14/61/1.4/1.0; af/12/47/1.5/1.0; af/9/34/1.3/0.9 (SMF 9404) - R/V GYF St. 340, 42°59'N 6°15'E, 26.V.1953, sand with shells; cs/23/77/2.8/1.7; cs/18/70/2.0/1.2 (SMF 9405) - R/V GYF St. 349, Port Cros, 42°59'N 6°23'E, 29.V.1953; af/11/47/1.4/1.0 (SMF 9406) - Italy, Lesina; cs/34/81/3.0/2.0; cs/19/75/2.4/1.6; cs/15/70/1.8/1.2; cs/11.5/63/2.5/1.5; cs/9/45/0.9/0.6; cs/8/50/0.9/0.5; cs/4/38/1.4/0.8; af/19/55/2.8/1.5; af/14/49/1.8/1.0; af/10/43/2.1/1.3; af/8/42/2.3/1.8; af/8/26/1.6/1.2; af/7.3/59/1.6/1.0; af/4.2/30/1.2/0.7; af/3.1/20/?/? (ZMB Q. 4340) - Croatia, Ile Proie, Rt Straznica, 28.VII.1971, 6 m; cs/20/78/2.2/1.6 (SMF 9407) - Rt Straznica, 28.VII.1971, 40 m; cs/9/56/1.3/0.9; af/8/47/1.1/0.8 (SMF 9408) - Rt Straznica, 28.VII.1971, 40-42 m; cs/7/45/0.9/0.6 (SMF 9409) - Ile Proie, U. Kita Surplomb, 30.VII.1971, 35 m; cs/22/73/2.0/1.2 (SMF 9410) - Ile Proie, SW Gryunov Komal, 2.VIII.1971, 45 m; cs/15/66/1.3/0.8; af/17/65/1.8/1.2; af/9/44/1.7/1.2; af/5/26/1.1/0.7 (SMF 9411) - Greece, N Aegean, Kalloni Gulf, St. K 8a, V.1995, 10 m; cs/11.5/66/1.5/0.9 (SMF 9412) - R/V METEOR 25 St. 26 KG2, 32°59.91'N 35°02.21'E, 2.VI.1993, 36.4 m; cs/17/70/2.0/1.2 (SMF 9413) - R/V METEOR 25 St. 25 Ku, 32°00.54'N 31°53.70'E - 32°00.55'N 31°52.61'E, 1.VI.1993, 199-196 m; cs/28/73/2.3/1.6; cs/15/64/2.0/1.3; cs/7/45/1.0/0.6 (SMF 9414) — Red Sea: Gulf of Akaba, E49/5; cs/12/52/1.3/0.8 (HUJ partim) - Red Sea; cs/61/181/3.1/2.0; cs/53/171/3.0/2.0 (SAM A20476) — W Indian Ocean: R/V ANTON BRUUN St. 9, Comores, Bandeli Reef, 12°63'12"S 45°16'05"E, 26.XI.1964, 2-5 m; af/14/44/1.8/1.3 (USNM) - Madagascar, Nosy Bé region, Canyon du Banc cinq mètres, 13°27.00'S 47°58.00'E, 30.X.1969, 51 m; cs/7/49/1.2/0.8 (SMF 9415) - Banc Pracel, near Chesterfield Islands St. 16, 17°37.15'S 43°20.00'E, 10.IV.1970, 48 m, sand; cs/8/46/0.8/0.5 (SMF 9416) — NW Pacifik: Japan, Ogasawara Islands, Chichijima, VII.1999, shallow water, among dead coral; cs/19/70/1.2/0.8 (CBM) — W Pacific: Northern Mariana Island, Uracas, 6.I.1992; cs/17/62/1.6/1.0 (CBM) - Papua New Guinea, Bismarck Sea, Madang, Padoz Reef, 5°09.30'S 145°48'E, 9.I.1989, 2 m; cs/10/53/1.4/1.0 (USNM 168390) - Madang, N side Rasch Pan Kri, 3.VII.1987, 10-20 m, coral; cs/15/95/1.2/0.8 (AM W23571) - Bismarck Archipelago, Ralun, 24.XI.1896; af/14/55/2.4/1.5 (ZMB 6560) — NE Pacific: USS ALBATROSS St. 4193, Canada, British Columbia, Strait of Georgia, Bowen Island, 20.VI.1903, 18-23 fms, green mud and fine sand; af/22/64/5.5/3.9 (USNM 5605) - USS ALBATROSS St. 4197, Bowen Island, 20.VI.1903, 31-90 fms; af/50/82/9.4/7.0; af/32/57/7.4/4.2 (USNM 5610) - R/V SONNE 110/1A Ropos 339 St. 4, U.S.A., Oregon, Bioherm, Pete-Vent-field, 44°40.30'N 125°06.50'W, 10.VII.1996, 635 m; cs/33/79/5.0/3.0 (SMF 9417) - R/V SONNE 109/2 St. TVG 115, Bioherm, 44°40.293'N 125°06.296'W, 23.VI.1996, 618 m; cs/72/129/6.2/4.2 (SMF 9418) - R/V SONNE 109/2 St. TVG 119, Bioherm, 44°40.146'N 125°06.685'W, 24.VI.1996, 625 m; af/72/86/5.2/3.6 (SMF 9419) - R/V SONNE 110/1A St. TVG 9, Bioherm, 44°39.258'N 125°06.003'W, 12.VII.1996, 596 m; cs/32/104/4.3/2.9; af/15/64/2.8/1.4 (SMF 9420) - off California St. SB39, 38°57.13'N 123°58.55'W, 28.XI.1987, 369 m; cs/76/121/5.3/4.0; cs/55/115/4.0/2.8; af/22/77/1.5/1.0; af/7/19/2.3/1.7 (USNM 123149) - USS ALBATROSS St. 4463, California, Monterey Bay, Point Pinos Station, S 17° W 8 miles, 13.V.1904, 48-111 fms, rocky;

af/27/74/2.3/1.5 (USNM 17307) - USS ALBATROSS St. 4430, California, Channel Islands, Santa Cruz Island, Gull Island, 14.IV.1904, 197-281 fms, black sand with pebbles and rocks; cs/14/65/2.3/1.3; af/13/52/2.1/1.0 (USNM 17308) - USS ALBATROSS St. 4415, California, Channel Islands, Santa Barbara Island, 11.IV.1904, 302-638 fms, green mud; af/13/40/4.2/2.5 (USNM 16939) - USS ALBATROSS St. 4418, Santa Barbara Island, 12.IV.1904, 238-310 fms, dark mud with sand and rocks; cs/38/102/5.3/4.0; af/37/86/6.4/3.9 (USNM 16983) - USS ALBATROSS St. 4399, California, San Diego, 32°44'50"N 117°48'45"W, 7.IV.1904, 245-285 fms, fine gray sand with rocks; af/32/71/7.5/4.5; af/17/55/5.2/3.2 (USNM 16934)

Diagnosis: Proboscidial papillae mainly digitiform with straight, median, longitudinal ridge; ailerons with deeply incised bases; parapodia of mid-body with two short, rounded postchaetal lobes; branchiae absent.

Description: Body up to 76 mm long with up to 181 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 8-9 rings (fig. 37a). Proboscis with two types of papillae: 1. numerous digitiform papillae with straight, median, longitudinal ridge; 2. isolated, shorter and broader, conical papillae with more or less distinctly straight, median, longitudinal ridge (figs. 37b, 38). Aileron with deeply incised base (fig. 37c). First two parapodia uniramous; following parapodia biramous (fig. 37d-l). Two slender triangular to digitiform prechaetal lobes; neuropodial lobe usually slightly longer and wider than notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe distinctly shorter than neuropodial one. Two shorter, rounded, postchaetal lobes. Dorsal cirrus from 3rd parapodium, conical to oval; inserted - most clearly in anterior part of body - on body wall far above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae absent.

Distribution: Northwestern and northeastern Atlantic, Gulf of Mexico, Caribbean Sea, Mediterranean Sea, Red Sea, south coasts of Africa, Indo-Pacific, northwestern Pacific; 2-4066 m (fig. 39)

Discussion: The description and drawings of *Glycera tesselata* GRUBE 1863 are not very detailed, but the syntypes show all the characteristics of the taxon.

The holotype of *Glycera fundicola* CHAMBERLIN 1919 has been examined and is believed to be identical to *Glycera tesselata*.

The description and drawings of *Glycera tesselata* var. *minor* LA GRECA 1947 are rather vague, but the shape of the ailerons and the geographical distribution suggest that these are just small individuals of *Glycera tesselata*.

Glycera papillosa var. *nigticans* was first described by B. WU, SHEN & CHEN (1975) as an epitokous *Glycera* specimen. WU QIQUAN (1994) appears to be the author of the new taxon name, but it was impossible to get the type material and a copy of the publication. On the basis of the description and drawings from B. WU, SHEN & CHEN (1975) it is suggested that these are small, epitokous stages of *Glycera tesselata*.

Glycera benhami BÖGGEMANN & FIEGE 2001
Figs. 40-42

1916 *Glycera tesselata* – BENHAM: 143; pl. 47, figs. 23-25 (non GRUBE 1863)

2001 *Glycera benhami* BÖGGEMANN & FIEGE: 31, figs. 2, 8c-d, 10 [Locus typicus: Cook Strait, New Zealand; holotype: NZOI A441]

Material examined:

Type material: *Glycera benhami*: New Zealand, Cook Strait, 41°07.4'S 174°39.5'E, 4.x.1958, 214-229 m; holotype: cs/50/104/4.6/3.2 (NZOI A441) — New Zealand, South Island, 42°26.8'S 173°40.6'E, 21.XII.1982, 58-60 m; 4 paratypes: cs/41/102/4.2/3.0; cs/15/72/1.5/1.0; cs/8/55/1.2/0.8; cs/6/43/1.4/1.0 (NZOI U285) - paratype: cs/29/82/3.4/2.8 (SMF 9120)

Additional material: SW Pacific: New Zealand, 33°59'S 172°21'E, 22.IX.1958, 81-135 m; cs/22/81/2.2/1.5 (NZOI B93) - 34°00'S 172°15'E, 11.IV.1965, 158 m; cs/15/77/1.8/1.2; cs/13/66/2.0/1.3 (NZOI E323) - 41°16.5'-16.0'S 174°29.7'-29.6'E, 5.x.1958, 256 m; af/29/85/2.2/1.1 (NZOI A444) - 42°23.75'-23.88'S 173°51.32'-51.80'E, 13.XII.1982, 60-100 m; cs/30/78/4.3/2.6 (NZOI U254 partim) - 42°26.33'S 173°47.4'E, 15.XII.1982, 100 m; af/23/54/3.0/2.0; af/10/47/1.1/0.7 (NZOI U261) - 42°26.33'S 173°47.4'E, 15.XII.1982, 100 m; af/29/79/3.4/2.5 (NZOI U261 DR) - 42°26.45'S 173°43.90'E, 10.XII.1982, 64 m; cs/22/77/2.3/1.6 (NZOI U243) - 42°26.55'S 173°41.87'E, 20.XII.1982, 40 m; cs/10/55/1.2/0.7; af/5.5/30/1.2/0.7 (NZOI U278A) - 42°27.0'S 173°47.8'E, 21.XII.1982, 90-102 m; cs/7/59/1.2/0.8; af/4/37/0.8/0.5; af/4/28/1.3/1.0 (NZOI U286 partim) - 42°27.3'S 173°44.2'E, 20.XII.1982, 90 m; cs/17/76/2.1/1.7 (NZOI U281 partim) - 42°27.95'S 173°39.80'E, 21.XII.1982, 98-95 m; cs/23/82/2.1/1.4; cs/14/62/1.6/1.0; cs/12/61/1.8/1.2 (NZOI U284 partim) - 42°27.95'S 173°39.80'E, 21.XII.1982, 98-95 m; cs/9/53/1.3/0.7 (SMF 9435) - 42°29.38'S 173°38.16'E, 9.XII.1982, 1020-1140 m; af/22/45/3.2/2.0 (NZOI U242 partim) - c. 42°38.05'S 173°39.65'E, 11.XII.1982, 120 m; cs/23/82/2.2/1.8; cs/17/73/2.1/1.6 (NZOI U247 partim) - 42°40.35'S 173°37.65'E, 14.XII.1982, 110-180 m; af/5/29/0.9/0.6; af/4/29/0.8/0.5 (NZOI U258 TAM) - 42°42.2'S 173°37.3'E, 14.XII.1982, 100-112 m; cs/3/27/0.8/0.5; af/9/41/1.8/1.2 (NZOI U258 DR) - 42°45'S 173°40'E, 31.III.1967, 191-209 m; cs/20/88/2.3/1.6; cs/2/24/0.6/0.4 (NZOI E759) - 43°04.30'S 176°59.55'E, 15.IX.1989, 330 m; cs/12/69/1.8/1.1 (NZOI V382 partim) - 43°16.5'S 177°10.5'E, 11.X.1963, 210 m; cs/18/82/2.5/1.9; cs/4/33/0.6/0.4; cs/3.5/38/0.7/0.4; cs/3.2/36/0.7/0.4; cs/1.9/28/0.5/0.3; af/2.2/27/0.5/0.3 (NZOI D121) - 43°17'S 177°11'E, 8.IX.1963, 253 m; af/15/68/1.4/1.0 (NZOI A892) - 43°22.4'S 173°21.9'E, 31.X.1979, 75 m; cs/9/77/1.9/1.1; cs/3/27/0.8/0.5; af/9/67/1.9/1.1 (NZOI S184) - 43°35.4'S 175°57.3'E, 20.X.1979, 322 m; cs/10/82/2.3/1.7 (NZOI S127) - 43°53.4'S 173°54.2'E, 30.X.1979, 400 m; cs/8/61/1.3/0.9; cs/3/37/0.9/0.5 (NZOI S177) - 43°56'S 179°15'W, 15.IX.1963, 203 m; cs/4/38/0.5/0.3 (NZOI A917) - 44°14.1'S 176°56.7'W, 23.III.1978, 325 m; cs/48/101/3.9/2.8 (NZOI Q32) - 45°43'S 171°05'E, 20.I.1970, 145 m; cs/47/114/5.8/4.5; cs/44/118/6.7/5.0 (NZOI G679) - 48°00'S 168°32'E, 17.I.1965, 134 m; cs/22/88/3.6/2.7 (NZOI F97 partim) - 48°32'S 167°09'E, 13.I.1965, 139 m; af/11/55/2.3/1.6; af/11/45/2.4/1.7 (NZOI F78) - 49°40.1'S 178°50.1'E, 14.III.1981, 95 m; af/20/58/5.7/4.0 (NZOI T40) - 52°52'S 169°49'E, 31.I.1965, 168 m; cs/26/110/3.0/2.2 (NZOI F142) — Tasman Sea: R/V TANGAROA Cruise 81-T-1 St. 170/8, Australia, Victoria, eastern Bass Strait, 38°52.6'S 148°25.2'E, 15.XI.1981, 140 m, muddy sand; cs/5/33/0.8/0.4; af/10/35/1.8/1.0; af/9/43/1.3/0.7; af/8/36/1.3/0.7; af/5/22/1.3/0.8; af/4.2/21/1.0/0.6; af/3/22/1.0/0.6 (MV F 80205 partim) - F/V SARDA Cruise 80-Sa-1 St. 112, southwestern Bass Strait, 40°22.2'S 145°17'E, 3.XI.1980, 40 m, sand; cs/46/107/4.4/

3.0; cs/14/77/1.4/1.0; af/39/74/4.1/2.6; af/25/67/2.5/1.8 (MV F 80212 partim) - R/V TANGAROA Cruise 81-T-1 St. 198, western Bass Strait, 40°26.7'S 143°41.4'E, 21.XI.1981, 85 m, sandy shell; cs/39/102/3.8/2.7; cs/18/72/1.5/1.0; cs/13/59/2.2/1.4; cs/12/66/1.4/1.0; af/21/67/2.4/1.8; af/19/64/2.1/1.4; af/14/56/2.2/1.4 (MV F 80216 partim) - F/V SARDA Cruise 80-Sa-1 St. 109, southwestern Bass Strait, 40°30.9'S 144°56'E, 2.XI.1980, 27 m, coarse sand; cs/19/70/1.6/1.0; cs/16/74/1.2/0.7; cs/13.5/62/1.0/0.6; cs/13/69/1.2/0.7; cs/12/63/1.1/0.7; cs/11.5/62/1.2/0.7; cs/10/72/1.2/0.8; cs/10/57/1.1/0.7; cs/8/47/0.9/0.5; cs/5.5/41/0.6/0.4; af/14/51/1.5/0.9; af/11/57/1.4/0.8; af/9.5/43/1.2/0.7; af/8/47/1.4/0.8; af/8/47/1.0/0.6; af/8/44/1.0/0.6; af/8/43/1.2/0.7; af/8/40/1.2/0.7; af/7/39/1.0/0.6; af/6/37/1.0/0.6; af/5/29/1.2/0.7; af/4/23/1.0/0.6 (MV F 80208) - F/V SARDA Cruise 80-Sa-1 St. 109, southwestern Bass Strait, 40°30.9'S 144°56'E, 2.XI.1980, 27 m, coarse sand; af/10/54/1.4/0.8 (SMF 8839) - R/V HAI-KUNG Cruise 81-HK-1 St. 139, eastern Bass Strait, 40°44'S 148°33'E, 7.II.1981, 55.9 m, sand; cs/9/45/1.3/0.8; cs/8/46/0.9/0.6; cs/6/41/1.0/0.6; cs/5.5/36/0.9/0.5; cs/5.5/33/1.0/0.7; cs/4/34/0.8/0.5; af/11/52/1.3/0.8 (MV F 80215) - 41°03.2'S 174°21.5'E, 7.XII.1983, 78-93 m; cs/25/86/2.0/1.4 (NZOI T478 partim) - 41°40.01'S 170°39.8'E, 10.IX.1992, 327-352 m; cs/23/57/2.8/2.0; cs/4/32/1.0/0.6; cs/2.5/24/0.6/0.4 (NZOI V426) - FIS ENDEAVOUR, Tasmania, off Maria Island, 143 m; af/39/67/4.4/2.8 (AM E6308) - 45°38.8'S 166°53.3'E, 8.XI.1978, 0-40 m; cs/9/62/1.2/0.8; cs/6/50/1.0/0.7 (NZOI Q102A) - 46°57.5'S 167°32.5'E, 26.VIII.1963, 104 m; cs/10/74/1.8/1.1 (NZOI A836)

Diagnosis: Proboscidial papillae mainly digitiform with single, terminal, U-shaped and straight, median, longitudinal ridge; ailerons with deeply incised bases; parapodia of mid-body with two short, rounded postchaetal lobes; branchiae absent.

Description: Body up to 50 mm long with up to 118 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 8-10 rings (fig. 40a). Proboscis with three types of papillae: 1. numerous digitiform papillae with single, terminal, U-shaped and straight, median, longitudinal ridge; 2. less numerous digitiform papillae with 1-2 V-shaped ridges near tip and straight, median, longitudinal ridge; 3. isolated, slightly shorter and broader, conical papillae with straight, median, longitudinal ridge (figs. 40b, 41). Aileron with deeply incised base (fig. 40c). First two parapodia uniramous; following parapodia biramous (fig. 40d-l). Two slender triangular to digitiform prechaetal lobes of about same length; anteriorly notopodial and neuropodial lobe with small digitate distal process; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter, rounded postchaetal lobes. Dorsal cirrus from 3rd parapodium, conical to oval; inserted – most clearly in anterior part of body – on body wall above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as postchaetal lobes; anteriorly with small digitate distal process; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated near parapodial base. Branchiae absent.

Remarks: Both types of digitiform proboscidial papillae sometimes with subterminal swellings and lateral groups of cilia (fig. 41c).

Distribution: Tasman Sea and coasts of New Zealand; 27-1140 m (fig. 42)

Discussion: Together with *Glycera brevicirris* GRUBE 1870 and *Glycera tesselata* GRUBE 1863, *Glycera benhami* belongs to a small group of glycerids characterized by ailerons with deeply incised bases, parapodia with short rounded postchaetal lobes, mostly digitiform proboscidial papillae, and a complete absence of branchiae. In contrast to *Glycera benhami*, which has digitiform papillae with one straight, median, longitudinal and an additional terminal, U-shaped ridge, the digitiform papillae of *Glycera tesselata* show only a straight, median, longitudinal ridge. Finally, in *Glycera brevicirris* about 6-20 ridges are present, which are U-shaped basally and V-shaped apically.

Glycera russa GRUBE 1870
Figs. 43-45

1870a *Glycera russa* GRUBE: 61 [Locus typicus: Ovalau (Fiji); holotype: HZM V-1093]

1885 *Glycera lamelliformis* MCINTOSH: 347; pl. 42, figs. 9-10; pl. 22A, fig. 11 [Locus typicus: Station 167 A, Queen Charlotte Sound, Cook Strait, New Zealand; paralectotype (hic): BMNH 1885.12.1.242a] partim

Material examined:

Type material: *Glycera russa*: Fiji, Ovalau; holotype: af(af+mf)/19(15+4)/77(66+11)/2.7/1.8 (HZM V-1093) — *Glycera lamelliformis*: HMS CHALLENGER St. 167A, New Zealand, Cook Strait, Queen Charlotte Sound, 41°4'S 174°19'E, 27.VI.1874, 10 fms, mud; paralectotype: af(af+mf)/27.6(4.6+23)/70(21+49)/4.0/3.0 (BMNH 1885.12.1.242a)

Additional material: W Pacific: HMS CHALLENGER St. 174C, S of Fiji Island, 19°7'S 178°19'E, 3.VIII.1874, 610 fms, coral mud; mf/38/62/4.0/2.7 (BMNH 1885.12.1.243) — SW Pacific: New Zealand, 34°32.13'S 173°13.15'E, 27.VIII.1978, 18 m; af/8/59/1.9/1.2 (NZOI P615-3) - 34°32.13'S 173°13.15'E, 27.VIII.1978, 18 m; af/10/62/1.5/1.0 (NZOI P615-4) - 34°37'S 173°06'E, 13.IV.1965, 58 m; af/30/60/2.7/1.9 (NZOI E351) - 34°50.38'S 173°14.6'E, 27.VIII.1978, 21 m; af/16/79/2.0/1.4 (NZOI P617-3) - 36°20.0'S 174°49.0'E, 1995, 5-41 m; cs/87/189/3.4/2.5 (NZOI Z8443) - Tauranga; cs/110/233/4.7/3.5; af/101/183/5.1/3.5 (ZMB 6666 partim) - Wellington, Petone Beach, c. 41°13'S 174°52'E, 30.I.1967, intertidal; cs/136/225/4.3/2.9 (NZOI A964) - 42°27.3'S 173°44.2'E, 20.XII.1982, 90 m; af/35/90/3.1/2.3 (NZOI U281 partim) - c. 42°38.05'S 173°39.65'E, 11.XII.1982, 120 m; af/40/101/3.2/2.4 (NZOI U247 partim) - 43°04.30'S 176°59.55'E, 15.IX.1989, 330 m; cs/50/159/3.9/2.7; af/34/101/2.8/2.0; af/33/90/4.0/2.8; af/19/79/2.2/1.7; af/10/41/2.0/1.4; af/9/53/0.9/0.5; af/6/38/1.0/0.5 (NZOI V382 partim) - 43°07'S 177°10'E, 8.IX.1963, 331 m; af/39/115/3.3/2.4 (NZOI A894) - 43°14.31'S 179°02.18'E, 11.IX.1989, 471 m; cs/59/143/4.0/2.6 (NZOI V367) - 43°20.50'S 176°59.88'E, 15.IX.1989, 244 m; af/7/35/1.6/1.0 (NZOI V381) - 43°27'S 177°50'W, 5.II.1968, 439 m; cs/39/147/2.7/2.0 (NZOI G369) - 43°28'S 178°32'W, 3.II.1968, 439 m; af/46/89/4.1/2.5 (NZOI G367) - 43°29.69'S 178°59.55'W, 8.IX.1989, 499 m; cs/72/174/4.0/2.7 (NZOI V366 TAM) - 43°29.87'S 178°59.73'E, 8.IX.1989, 474 m; af/37/60/2.5/1.6; af/27/48/2.6/1.7 (NZOI V366 DAB) - 43°30.60'S 178°38.11'E, 6.IX.1989, 345 m; cs/96/179/4.5/3.0 (NZOI V361 partim) - 43°31.0'S 175°59.1'E, 21.X.1979, 365 m; cs/97/184/5.0/3.8; af/86/139/5.0/4.0; af/72/134/4.8/3.4; af/70/138/4.4/3.0 (NZOI S128) - 43°31.0'S 175°59.1'E, 21.X.1979, 365 m; af/91/152/4.6/3.0 (SMF 9436) - 43°32.0'S 175°59.4'E, 20.X.1979, 368 m; cs/80/183/4.8/3.8; af/43/94/5.2/4.0; af/38/120/4.2/3.0 (NZOI S119 partim) - 43°33.4'S 175°58.6'E, 20.X.1979, 322 m; af/28/77/4.2/3.0; af/21/62/3.3/2.6

(NZOI S126) - 43°34.6'S 175°58.1'E, 20.x.1979, 335 m; cs/74/155/3.1/2.0 (NZOI S121) - 43°34.92'S 176°59.98'E, 15.ix.1989, 335 m; af/32/118/2.5/1.8; af/26/73/2.2/1.4; af/16/60/2.5/1.8; af/8/42/1.8/1.2 (NZOI V380) - 43°34.92'S 176°59.98'E, 15.ix.1989, 335 m; af/23/83/2.7/1.8 (SMF 9437) - 43°35'S 178°03'W, 6.ii.1968, 384 m; af/15/52/3.0/1.9 (NZOI G388) - 43°35.48'S 178°59'50E, 13.ix.1989, 385 m; af/34/57/3.2/2.6 (NZOI V373 partim) - 43°37'S 178°38'W, 2.ii.1968, 439 m; af/33/98/3.6/2.5 (NZOI G351) - 43°39'S 178°03'W, 6.ii.1968, 388 m; af/34/94/3.5/2.4 (NZOI G389) - 43°44.92'S 179°00.35'E, 8.ix.1989, 399 m; af/45/105/3.0/2.2 (NZOI V365) - 43°53'S 179°35'W, 18.i.1968, 380 m; cs/53/165/4.0/3.0; af/66/145/5.3/4.0; af/52/129/3.7/2.9 (NZOI G191) - 44°27.928'S 171°14.90'E, 19.v.1992, 12 m; cs/32/188/2.8/2.0; af/28/129/2.3/1.7; af/12/60/2.3/1.5 (NZOI V413 A1) - 44°27.928'S 171°14.90'E, 19.v.1992, 12 m; cs/38/171/2.4/1.6; af/21/87/2.0/1.6 (NZOI V413 A2) - 44°27.928'S 171°14.90'E, 19.v.1992, 12 m; cs/65/166/4.2/2.9; af/25/106/2.3/1.6; af/24/66/1.3/0.8 (NZOI V413 A3) - 44°28.717'S 171°13.976'E, 18.v.1992, 8 m; cs/39/180/2.5/1.8 (NZOI V409 A3) - 44°29.103'S 171°13.702'E, 18.v.1992, 8 m; af/19/53/1.4/1.0 (NZOI V410 A3) - 44°29.790'S 171°13.910'E, 19.v.1992, 12 m; af/37/130/2.9/2.0 (NZOI V412 A1) - 44°29.790'S 171°13.910'E, 19.v.1992, 12 m; cs/14/108/1.4/1.0 (NZOI V412 A2) - 44°29.790'S 171°13.910'E, 19.v.1992, 12 m; af/39/132/2.9/2.0 (NZOI V412 A3) - 44°29.940'S 171°14.378'E, 19.v.1992, 14 m; af/41/96/4.2/2.7 (NZOI V411 A2) - 44°29.940'S 171°14.378'E, 19.v.1992, 14 m; cs/96/225/4.7/3.3 (NZOI V411-2) - 44°31.032'S 171°12.309'E, 19.v.1992, 7 m; af/25/124/2.3/1.6; af/13/67/2.3/1.8 (NZOI V414 A1) — Tasman Sea: New Zealand, 37°18.7'S 174°06.2'E, 25.x.1962, 129-132 m, mud; af/45/122/2.8/2.0; af/27/93/2.2/1.4 (NZOI B669) - 39°50'S 173°01'E, 6.ix.1959, 95 m; af/21/51/3.0/2.1 (NZOI C184 partim) - 39°50'S 173°42.5'E, 5.ix.1959, 68 m; af/33/82/4.2/3.0; af/19/58/2.8/2.0 (NZOI C183 partim) - 40°00.04'S 173°00'E, 22.x.1962, 117 m, very fine green-gray sandy mud; af/83/147/4.6/3.5 (NZOI B646) - 41°03.4'S 171°54.4'E, 5.iii.1982, 47 m; af/20/71/2.0/1.5 (NZOI Q726) - 41°07.3'S 172°04.2'E, 7.ii.1983, 31 m; cs/13/88/1.2/0.7 (NZOI S392C) - 41°07.5'S 172°04.3'E, 7.ii.1983, 32 m; cs/20/103/1.5/1.0 (NZOI S392B) - 41°07.6'S 172°04.3'E, 7.ii.1983, 29 m; af/15/77/1.5/1.0 (NZOI S392A) - 41°27.0'S 171°16.1'E, 25.ii.1982, 155 m; af/10/48/2.3/1.6 (NZOI Q705) - 41°28.8'S 171°01.6'E, 24.ii.1982, 202 m; cs/28/122/1.9/1.4; af/20/61/3.0/1.9 (NZOI Q703) - 41°38.7'S 171°42.2'E, 6.ii.1983, 28 m; cs/6.2/67/1.0/0.6 (NZOI S390A) - 42°14.5'S 170°57.7'E, 4.iii.1982, 156 m; cs/90/167/3.3/2.5; af/35/91/2.2/1.6; af/18/83/1.7/1.2 (NZOI Q722) - 42°20.0'S 170°38'E, 11.vi.1979, 249 m; af/22/73/3.0/2.0; af/19/62/2.5/1.4 (NZOI P655) - 42°25.0'S 171°06.0'E, 5.iii.1982, 35 m; af/10/45/1.3/0.8 (NZOI Q725) - 42°25.1'S 171°07.0'E, 3.ii.1983, 28 m; cs/8/62/0.9/0.5; cs/7/56/0.9/0.5; af/21/85/1.8/1.0; af/9.5/51/1.0/0.5; af/4.5/33/0.9/0.5 (NZOI S383C) - 42°33.55'S 170°25.8'E, 9.ix.1992, 522-550 m; af/37/75/4.3/2.8 (NZOI V423 partim) - 42°50.4'S 169°58.7'E, 19.ii.1982, 297 m; af/13/37/2.2/1.4 (NZOI Q693) - 43°03.5'S 170°17.6'E, 27.i.1983, 24 m; af/27/95/1.7/1.1 (NZOI S364A) - 46°35.2'S 167°05'E, 25.viii.1963, 390 m; af/25/78/2.3/1.7 (NZOI A823)

Diagnosis: Proboscidial papillae mainly conical with about 6-16 ridges; ailerons with triangular bases; parapodia of mid-body with two more or less triangular postchaetal lobes; simple, retractile, digitiform branchiae, situated dorsally on posterior side of parapodial bases.

Description: Body up to 136 mm long with up to 233 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-12 rings (fig. 43a). Proboscis with two types of papillae: 1. numerous conical papillae with about 6-16 ridges; 2. isolated, broader, oval to globular papillae with about 5-13 ridges; ridges U-shaped basally and V-shaped apically (figs. 43b, 44). Aileron with triangular base (fig. 43c). First two parapodia uniramous; following parapodia biramous (fig. 43d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia first neuropodial lobe elongated and more or less distinctly triangular, then also notopodial lobe shaped in the same way, but usually slightly shorter than neuropodial lobe; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, shorter than postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, simple, digitiform; starting from about 17th to 32nd parapodium to near posterior end; situated dorsally on posterior side of parapodial bases; best developed in mid-body region, extending beyond prechaetal lobes.

Remarks: KNOX (1960b) described a 230 mm long specimen of *Glycera lamelliformis*, here suggested to be *Glycera russa* (see "Appendix", p. 237).

Distribution: Sea around New Zealand and Fiji; intertidal to 1116 m (fig. 45)

Discussion: The description of *Glycera russa* GRUBE 1870 is not very detailed, but corresponds well with the type material. GRUBE (1870a) stated that the species has no branchiae, but they are present on some of the parapodia of the holotype.

MCINTOSH (1885) himself reported that the smaller type specimen of *Glycera lamelliformis* did not agree with the description of the larger specimen because of the distinctly digitiform branchiae. The herewith fixed paralectotype is referred to *Glycera russa*.

Glycera bassensis BÖGGEMANN & FIEGE 2001
Figs. 46-48

2001 *Glycera bassensis* BÖGGEMANN & FIEGE: 30, figs. 1, 8a-b, 10 [Locus typicus: western Bass Strait, Australia; holotype: MV F 80203]

Material examined:
Type material: *Glycera bassensis*: HMAS KIMBLA Cruise 80-K-5 St. 76, Australia, Victoria, western Bass Strait, 39°18.8'S 143°38'E, 10.x.1980, 97 m, shelly sand; holotype: cs/122/195/5.1/4.0 (MV F 80203) - HMAS KIMBLA Cruise 80-K-5 St. 78, western Bass Strait, 39°22'S 143°28.4'E, 10.x.1980, 106 m, coarse sand; paratype: af/75/122/6.5/5.3 (MV F 80207) - R/V TANGAROA Cruise 81-T-1 St. 198, western Bass Strait, 40°26.7'S 143°41.4'E, 21.xi.1981, 85 m, sandy shell; paratype: cs/97/191/5.0/3.7 (SMF 9118)

Additional material: Tasman Sea: HMAS KIMBLA Cruise 80-K-5 St. 57, western Bass Strait, 39°06.3'S 143°21.1'E, 8.x.1980, 60 m; cs/49/122/2.4/1.8; af/68/105/4.7/3.8 (MV F 80211 partim) - R/V TANGAROA Cruise 81-T-1 St. 162, central Bass Strait 40°09.4' S

147°32.6' E, 14.XI.1981, 51 m, shell; af/24/71/2.2/1.7; af/20/60/2.7/1.8 (MV F 80213 partim)

Diagnosis: Proboscidial papillae mainly digitiform with about 10-17 ridges; ailerons with pointed triangular bases; parapodia of mid-body with rounded or more or less blunt triangular notopodial and slightly longer, triangular neuropodial postchaetal lobes; branchiae absent.

Description: Body up to 122 mm long with up to 195 segments. Mid-body segments biannulate; anterior annulus slightly longer than posterior one. Long, conical prostomium consisting of about 20-24 rings (fig. 46a). Proboscis with two types of papillae: 1. numerous digitiform papillae with about 10-17 ridges; 2. isolated, slightly shorter and broader, conical to oval papillae with about 8-12 ridges; ridges U-shaped basally and V-shaped apically (figs. 46b, 47). Aileron with pointed triangular base (fig. 46c). First two parapodia uniramous; following parapodia biramous (fig. 46d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia neuropodial lobe slightly elongated, triangular and notopodial lobe shorter, rounded; in mid-body notopodial lobe also slightly elongated and more or less blunt triangular, but always slightly shorter than neuropodial lobe; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as notopodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated near parapodial base. Branchiae absent.

Distribution: Known only from Bass Strait; 51-106 m (fig. 48)

Discussion: *Glycera russa* GRUBE 1870, a species also occurring along the Australian coasts, possesses some phenotypic characteristics with *Glycera bassensis*. Both species show almost identical proboscidial papillae and parapodial structures. The prostomium of *Glycera russa* is slightly shorter and consists of only about 10-12 rings, and the ailerons have triangular bases. Moreover, *Glycera russa* has simple, retractile, digitiform branchiae, which are situated dorsally on the posterior side at the base of the parapodia, in contrast to *Glycera bassensis* where branchiae are absent.

Glycera celtica O'CONNOR 1987
Figs. 49-51

1973b *Glycera capitata* – DAY: 46 (non ØRSTED 1842) [off Beaufort, North Carolina, U.S.A.]

1975 *Glycera capitata* – GARDINER: 165, fig. 18m-n (non ØRSTED 1842) [34°19'N, 75°56'W, off Beaufort, North Carolina, U.S.A.; USNM 51110]

1987 *Glycera celtica* O'CONNOR: 179, fig. 10a-e [Locus typicus: Celtic Sea: 49°27·00'N, 10°33·8'W; holotype: NMI 83.1985]

?1987 *Glycera dayi* O'CONNOR: 181, fig. 11a-e [Locus typicus: Beaufort, North Carolina (U.S.A.); holotype: USNM 51110]

Material examined:

Type material: *Glycera celtica*: THALASSA St. FF 112, Celtic Sea, 49°27.00'N 10°33.80'W, 10.IV.1979, 144 m, muddy sand; holotype: af/125/211/6.3/4.7 (NMI 83.1985) — *Glycera dayi*: North Carolina, off Beaufort, 34°19'N 75°56'W, 6.IV.1965, 130 m, sandy mud; holotype: af/6/38/1.2/0.8 (USNM 51110)

Additional material: NW Atlantic: U.S.A., North Carolina, off Beaufort, 34°28'N 76°07'W, 30.IX.1965, 40 m, sandy mud; af/18/68/2.8/2.0; af/8/54/1.5/1.0 (USNM 51112) - Georgia, Sapelo Island St. 4, 31.V.1969; af/7/42/1.5/1.1 (SMF 9438) - Sapelo Island St. 7, 1.VI.1969; af/4.7/39/1.3/1.0 (SMF 9439) - Sapelo Island St. CJ 2, 17.VII.1969; cs/19/93/2.4/1.5 (SMF 9440) - Sapelo Island St. CJ 3, 17.VII.1969; af/28/105/2.3/1.6 (SMF 9441) - Sapelo Island St. CJ 6, 30.VII.1969; af/23/95/2.1/1.3 (SMF 9442) — NE Atlantic: Ireland, off S coast; af/42/93/4.5/3.1; af/33/71/5.1/4.0 (USNM 74738) - Celtic Sea, 1979; af/73/151/4.4/3.5 (USNM 81531) - Portugal, Seplate-7 A 4083 St. 23, 38°05.9'N 8°56.7'W, 21.X.1983, 127 m, sand; af/43/86/4.0/3.0 (MNCN) - Seplate-6 A 2517 St. 12, 37°04.5'N 8°58.5'W, 21.V.1981, 35 m, sand; af/73/151/4.1/2.7 (MNCN) - Spain, Fauna 1 St. 67A, 36°40.58'N 6°40.2'W - 36°40.04'N 6°39.64'W, 27.VII.1989, 55-56 m, mud; af/139/277/7.2/5.0 (MNCN) — North Sea: Oseberg Sor-98 St. 4-4, 60°23.32'N 2°48.01'E, 3.V.1998, 102 m; af/46/115/3.0/2.4 (ZMMSU) - R/V SENCKENBERG D 1990 St. 4 vV, 55°46.93'N 3°52.38'E, 10.VIII.1990, 48.4 m; af/22/85/2.4/1.6 (SMF 9443) - R/V SENCKENBERG DOG D St. 41/1 RD, 55°44.01'N 3°42.48'E, 31.VII.1995, 44.5 m; af/48/60/6.0/4.2; af/25/49/6.5/4.5 (SMF 9444) — Mediterranean Sea: France, Marseille; cs/196/231/8.6/5.7 (MNHN A117 partim) - Italy, Gulf of Gaeta, Licola, 1966-68; af/65/159/6.0/4.0 (SMF 9445) - Naples; cs/410/349/9.0/5.7 (ZMB 96) - Naples; cs/120/194/4.8/3.6; cs/120/191/5.0/4.0 (ZMB Q. 4336) - Naples; af/101/168/5.8/4.2; cs/54/221/3.9/2.7 (ZMB Q. 4337 partim) - Lesina; af/135/187/8.7/5.0 (ZMB Q. 4329) - R/V METEOR 25 St. 1 KG1, 40°09.91'N 16°46.91'E, 17.V.1993, 44.5 m; af/49/111/2.8/1.5 (SMF 9446)

Diagnosis: Proboscidial papillae mainly conical with about 6-16 ridges; ailerons with rounded triangular bases; parapodia of mid-body with two more or less blunt triangular postchaetal lobes; branchiae absent.

Description: Body up to 410 mm long with up to 349 segments. Mid-body segments biannulate; anterior annulus slightly longer than posterior one. Conical prostomium consisting of about 9-13 rings (fig. 49a). Proboscis with two types of papillae: 1. numerous conical papillae with about 6-16 ridges; 2. isolated, broader, oval to globular papillae also with about 6-16 ridges; ridges U-shaped basally and V-shaped apically (figs. 49b, 50). Aileron with rounded triangular base (fig. 49c). First two parapodia uniramous; following parapodia biramous (fig. 49d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia first neuropodial then also notopodial lobe slightly elongated, both lobes about the same length and more or less blunt triangular; in posterior parapodia

neuropodial lobe slightly longer than notopodial lobe; in last parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated near parapodial base. Branchiae absent.

Distribution: Northeastern coasts of North America, North Sea, west coasts of Europe, Mediterranean Sea; 10-200 m (fig. 51)

Discussion: The descriptions and drawings of *Glycera celtica* O'CONNOR 1987 predominantly match the holotype.

Glycera dayi O'CONNOR 1987 is only questionably referred to *Glycera celtica*, since the original description and drawings are probably not of the holotype and the specimen is here considered to be a juvenile with incompletely developed parapodia. O'CONNOR (1987) stated USNM 5100 as the catalogue number for the holotype. This is a lapsus calami, because a marine leech is deposited under this number. It was possible to reconstruct the real catalogue number on the basis of the synonym list given by O'CONNOR (1987, p. 181: "*Glycera capitata* sens. DAY 1973 and GARDINER 1975. *Type locality*. Off Beaufort, North Carolina, 120 m.").

Glycera robusta EHLERS 1868
Figs. 52-54

1868 *Glycera robusta* EHLERS: 656; pl. 24, figs. 31-32 [Locus typicus: San Francisco and Mendocino in Californien (U.S.A.); syntypes: MCZ 193, 233]

?1984 *Glycera dentribranchia* LEE: 14; pl. 1a-c, fig. 1 [Locus typicus: Collection: St. 1916, Korea, Yellow Sea; type: ? KORDI]

Material examined:

Type material: *Glycera robusta*: California, San Francisco; syntype: af/249/282/10.0/7.2 (MCZ 193) - California, Mendocino; 4 syntypes: cs/321/288/9.4/5.2; cs/171/256/9.6/6.8; cs/149/214/8.1/5.0; af/38/84/5.6/3.8 (MCZ 233)

Additional material: NW Pacific: USS ALBATROSS St. 3718, Japan, off Honshu Island, Shizuoka, Suruga Bay, Ose Zaki, 11.v.1900, 65 fms, volcanic sand with shells and rocks; af/78/116/9.5/7.0 (USNM 5337) — W Pacific: R/V SONNE 133 St. 11 GTVA, Edison Seamount, 3°19.049'S 152°34.887'E, 22.VII.1998, 1445 m; cs/234/266/13.7/9.0; cs/190/203/15.0/10.0 (SMF 9447) - R/V SONNE 133 St. 45 GTVA, Mussel Cliff, 3°19.340'S 152°35.464'E, 26.VII.1998, 1606 m; af/74/121/9.8/6.7 (SMF 9448) - R/V SONNE 133 St. 59 KG, Mussel Cliff, 3°19.341'S 152°35.463'E, 27.VII.1998, 1573 m; af/142/175/10.1/6.9; af/13/51/1.3/0.8 (SMF 9449) — N Pacific: USS ALBATROSS St. 3607, Bering Sea, Alaska, Aleutian Islands, N of Unalaska Island, 54°11'N 167°25'W, 18.VIII.1895, 987 fms, green mud with black lava and sand; af/115/148/10.0/7.0 (USNM Acc. No. 18179) — NE Pacific: Canada, British Columbia, Queen Charlotte Islands, Masset, Yakan Point; cs/384/304/10.3/7.0; af/154/174/9.8/6.4 (USNM 35971) - British Columbia, Hecate Strait, Stephens Island; cs/406/315/15.0/10.0; af/131/168/16.0/12.0 (USNM 35976) - British Columbia, Vancouver Island, Clayoquot; cs/372/294/18.0/12.0; cs/213/280/15.5/11.0; cs/134/249/8.2/4.8; cs/79/140/8.5/6.0 (USNM 35969) - W coast Vancouver Island, 16.I.1934; cs/295/359/24.0/18.0; cs/105/251/8.5/5.2; af/140/187/15.0/10.0; af/127/202/11.5/7.9 (USNM 35956) - British Columbia, Susan Bank, 27.VI.1946; af/313/238/10.7/7.0 (USNM 35970) - U.S.A., Washington, W side San Juan Islands, 6.XI.1941; af/114/142/10.3/7.5 (USNM 30946) - Washington, Puget Sound St. 2, 47°42'16"N 122°26'24"W, 21.V.1963, 172-210 m, silt; cs/278/359/20.5/14.0 (USNM 36590) - California, La Jolla, Canyon S of pier at Scripps Institution, 1.XII.1949, 24 fa.; af/70/167/9.0/6.2 (USNM 35981) - California; af/148/212/11.0/8.0 (HZM V-12595) - California; cs/297/296/11.0/7.0 (USNM 35974) - Mexico, Gulf of California, Guayamas Bay, San Carlos Bay, IX.1939; cs/626/548/10.0/7.0 (USNM 35955)

Diagnosis: Proboscidial papillae mainly conical with 4-9 more U-shaped ridges; ailerons with triangular bases; parapodia of mid-body with rounded to blunt triangular notopodial and slightly shorter, rounded neuropodial postchaetal lobes; blister-like branchiae dorsally on parapodial bases.

Description: Body up to 626 mm long with up to 548 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one. Conical prostomium consisting of about 10-11 rings (fig. 52a). Proboscis with two types of papillae: 1. numerous conical papillae with 4-9 ridges; 2. isolated, broader, oval to globular papillae with 4-8 ridges; ridges more U-shaped (figs. 52b, 53). Aileron with triangular base (fig. 52c). First two parapodia uniramous; following parapodia biramous (fig. 52d-l). Two slender triangular to digitiform prechaetal lobes of about same length; notopodial lobe sometimes slightly wider than neuropodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe rounded to blunt triangular and slightly longer and wider than rounded, sometimes also blunt triangular neuropodial lobe; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, shorter than postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medioventrally on parapodia. Branchiae non-retractile, blister-like; starting from about 19th to 28th parapodium to near posterior end; situated dorsally on parapodial bases.

Remarks: HILBIG (1994a) described a 800 mm long specimen (see "Appendix", p. 237). A posterior fragment from California was ca. 760 mm long with ca. 400 segments (USNM 35972). The specimens from the R/V SONNE 133 expedition (SMF 9447-9449) are from hydrothermally active vent regions (Edison Seamount with H_2S; Mussel Cliff with methane).

Distribution: North and Central Pacific Basin; intertidal to 1807 m (fig. 54)

Discussion: The description and drawings of *Glycera*

robusta EHLERS 1868 generally correspond with the syntypes.

LEE (1984) described the new species *Glycera dentribranchia* because of its retractile, bush-like branchiae, which are situated on and between the parapodia. The drawings (LEE 1984: pl. I A-C) show clearly that these structures are epibiontes (see "Introduction", p. 10). Without the "branchiae" the taxon seems to be identical to *Glycera robusta*. The classification is questionable, because it was impossible to get the type material, which might be in the KORDI.

Glycera pseudorobusta BÖGGEMANN & FIEGE 2001
Figs. 55-57

1975 *Glycera robusta* – GARDINER: 162; fig. 17o (non EHLERS 1868)

2001 *Glycera pseudorobusta* BÖGGEMANN & FIEGE: 39, figs. 7, 9e-f, 10 [Locus typicus: Wrightsville Beach, North Carolina; holotype: USNM 52963]

Material examined:

Type material: *Glycera pseudorobusta*: U.S.A., North Carolina, Wrightsville Beach, Intracoastal Waterway and Banks Channel, 8.III.1974, intertidal, muddy sand; holotype: cs/309/406/6.1/3.9 (USNM 52963) - paratype: af/236/272/5.8/3.7 (SMF 9450)

Additional material: NW Atlantic: Canada, Nova Scotia, Sandy Cove, VI.1954, intertidal, sand; af/346/379/11.0/8.0 (USNM 30949) - U.S.A., Maine, Boothbay Harbor, 19.VII.1954, mud and sand; af/173/154/10.0/7.5 (USNM 30944) - Massachusetts, Barnstable, 30.VIII.1875; af/89/140/10.0/7.0 (USNM 16041 partim) - Massachusetts, Nantucket Sound, VII.1958, 8 fms, fine sand; af/175/203/6.2/4.3; af/169/231/8.0/5.4; af/166/181/8.2/5.9; af/74/195/5.0/3.1; af/34/83/3.2/2.0; af/29/97/4.6/3.0; af/27/69/4.1/2.8; af/18/30/6.6/4.0 (USNM 33378) - Nantucket Sound, VII.1958, 8 fms; af/62/148/4.0/2.4; af/29/76/3.3/2.4 (USNM 118372) - Georges Bank St. 21, southern slope, 40°44.02'N 67°18.31'W, 9.V.1977, 97 m; af/57/189/2.1/1.5 (USNM 91366) - R/V OCEANUS St. 12, Georges Bank, 40°22.12'N 68°30.12'W, 9.XI.1981, 108 m; af/38/98/5.0/3.7 (USNM 149018) - Maryland, Chincoteague Bay; af/154/179/9.2/6.7 (USNM 30945) - North Carolina, Cape Lookout, 16.IV.1976; cs/178/306/4.1/2.2 (USNM 61733) - Georgia, Sapelo Island St. S 35, 23.VI.1969; af/60/182/5.0/3.3 (SMF 9451)

Diagnosis: Proboscidial papillae mainly conical with 4-9 mainly V-shaped ridges; ailerons with rounded triangular bases; parapodia of mid-body with more or less distinctly triangular notopodial and shorter, more rounded neuropodial postchaetal lobes; blister-like branchiae dorsally on parapodial bases.

Description: Body up to 346 mm long with up to 406 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-11 rings (fig. 55a). Proboscis with two types of papillae: 1. numerous conical papillae with 4-9 ridges; 2. isolated, slightly broader, oval to globular papillae with 4-8 ridges; ridges mainly V-shaped but a few U-shaped basally (figs. 55b, 56). Aileron with rounded triangular base (fig. 55c). First two parapodia uniramous; following parapodia biramous (fig. 55d-l). Two slender triangular to digitiform prechaetal lobes of about same length, notopodial lobe sometimes slightly wider than neuropodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and more or less distinctly triangular and slightly longer and wider than rounded to slightly triangular neuropodial lobe; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated termino-ventrally on parapodia. Branchiae non-retractile, blister-like; starting from about 37th to 40th parapodium to near posterior end; situated dorsally on parapodial bases.

Remarks: PETTIBONE (1963) described a specimen, as *Glycera robusta*, which was 800 mm long (see "Appendix", p. 235).

Distribution: Northwestern Atlantic coasts of North America; intertidal to 108 m (fig. 57)

Discussion: In general, glycerids from both coasts of North America with the combination of characters as described above have been identified as *Glycera robusta* EHLERS 1868. However, the proboscidial papillae of these species show conspicuous differences. *Glycera pseudorobusta* has papillae with mainly V-shaped ridges and *Glycera robusta* only U-shaped ridges. In addition, *Glycera robusta* is known to occur only in the Pacific, whereas *Glycera pseudorobusta* is only known from the Atlantic coast of North America.

Glycera dibranchiata EHLERS 1868
Figs. 58-60

1868 *Glycera dibranchiata* EHLERS: 670; pl. 24, figs. 1, 3-8, 10-28 [Locus typicus: Massachusets-Bay and New-Jersey (U.S.A.); syntypes: MCZ 167]

Material examined:

Type material: *Glycera dibranchiata*: Massachusetts Bay, Smith Shoal; 12 syntypes: cs/177/177/6.0/4.2; cs/146/204/7.2/5.1; cs/146/182/6.0/4.0; cs/115/169/6.0/3.8; cs/98/182/5.3/4.0; cs/97/165/5.0/3.3; cs/93/163/5.9/4.3; af/201/211/7.2/5.5; af/153/186/6.8/4.9; af/150/104/7.5/5.0; af/120/128/6.2/4.5; af/61/123/4.2/2.8 (MCZ 167)

Additional material: NW Atlantic: Canada, Nova Scotia, Halifax, 1877; af/55/93/4.8/3.2 (USNM 13267) - New Brunswick, St. Andrews; cs/160/225/6.2/4.8 (USNM 35952) - U.S.A., Maine, Boothbay Harbor, 21.VIII.1950; cs/227/198/8.0/5.9; af/129/101/11.2/7.3 (USNM 29527) - Maine, Casco Bay, Cliff Island, VII.1973, intertidal, sand with gravel; cs/146/167/4.9/3.2 (USNM 53775) - Cliff Island, VII.1973, intertidal, muddy sand; cs/335/230/11.0/7.0; cs/313/210/9.0/6.5 (USNM 53776) - Cliff Island, 22.VII.1975, intertidal, muddy sand; cs/206/196/7.0/5.0 (USNM 53777) - New Hampshire, Durham, Emerson's Beach, 2.VIII.1962, low tide, clay and mud; cs/159/192/8.2/5.8 (USNM 57844) - Emerson's Beach, VII.1963; cs/149/165/6.7/4.4; af/196/154/8.2/5.8; af/195/182/7.2/5.1 (USNM 74389) - New Hampshire, 1963; cs/219/205/10.0/6.0; cs/213/208/10.1/7.7; af/

165/185/11.0/7.7 (USNM 33381) - Massachusetts, Essex, 1.II.1956; cs/232/228/8.8/5.5; cs/231/232/7.0/4.7; cs/229/212/10.0/7.9 (USNM 29390) - Massachusetts, Gloucester, 1878, shore, sandy mud; cs/153/193/8.5/5.4; cs/100/178/6.0/3.9; cs/65/162/4.5/3.1; af/132/169/10.0/6.2 (USNM 17) - Massachusetts, Barnstable, 30.VIII.1875; cs/298/218/7.6/5.0 (USNM 16041 partim) - Massachusetts, West Falmouth Harbour inside Chappaquoit Point, 29.I.1954, muddy sand; af/55/106/4.1/3.1 (USNM 29556) - Massachusetts, Woods Hole, 26.I.1981; cs/297/216/10.5/6.4; cs/186/175/9.2/6.0 (USNM 64549) - Massachusetts, Buzzards Bay, Salt Pond Beach, St. 14/1, 12.VI.1975; cs/128/196/5.3/3.9 (SMF 9452) - Buzzards Bay, API, St. 3/1, 2.VI.1975; cs/152/208/6.0/4.3 (SMF 9453) - Rhode Island, Newport, shore; cs/127/192/7.9/6.0; cs/91/192/6.7/4.9; cs/78/176/6.2/4.3; af/69/94/6.0/4.1 (BMNH 1890.8.23.137-139) - Newport; cs/162/186/8.9/6.0 (ZMB 2765) - Rhode Island, Potters Pond, X.1952; cs/239/208/7.2/5.1; cs/210/195/6.1/4.4 (USNM 29542) - Georges Bank St. 4, 40°41.35'N 69°02.34'W, 24.V.1977, 77 m; cs/56/145/3.8/3.0 (USNM 91365) - Georges Bank, Nantucket Shoals St. 3, 40°39.54'N 69°27.16'W, 15.II.1977, 54 m; cs/77/181/4.6/3.4 (USNM 91363) - Nantucket Shoals St. 3, 40°39.39'N 69°27.21'W, 15.II.1977, 58 m; cs/105/180/3.3/2.5 (USNM 91361) - Georges Bank St. 20, southern slope, 40°36.27'N 67°44.30'W, XI.1977, 84 m; af/72/110/4.8/3.5 (USNM 120678) - off New Jersey St. B5, 39°27.30'N 73°03.36'W, 13.VIII.1977, 66 m; af/48/107/4.1/3.1; af/30/63/3.0/2.4 (USNM 65374) - 39°19.4'N 73°10.2'W, 3.VI.1977, 63 m; af/61/110/3.0/2.4 (USNM 56924) - off Delaware Bay, 29.I.1957, surface; cs/183/208/6.0/4.0; cs/176/207/5.5/4.0; cs/141/188/6.6/4.1; cs/102/196/4.2/2.8; cs/95/195/5.3/3.9 (USNM 29391) - Virginia, Chincoteague Bay, I.1957; af/122/138/7.4/5.0 (USNM 29539) - R/V FISH HAWK St. 8020, Virginia, Chesapeake Bay, off Tangier Light, 18.I.1914, 34.7 m; cs/179/190/7.2/5.9 (USNM 29565) - R/V FISH HAWK St. 8399, Chesapeake Bay, 9.XII.1915, 42.1 m, hard black shells; cs/135/186/7.3/5.0 (USNM 29572) - North Carolina, Bogue Sound, 26.II.1975; cs/238/224/6.4/4.7 (USNM 61740) - North Carolina, Wrightsville Beach, Banks Channel, 8.III.1974, intertidal, muddy sand; cs/138/176/4.5/3.0; cs/116/176/4.0/2.6; cs/114/178/4.0/2.3; af/60/107/3.2/2.2 (USNM 52958) - Wrightsville Beach, Intracoastal Waterway, 2.V.1973, intertidal, muddy sand; cs/246/197/6.8/5.0 (USNM 52960) - Georgia, Ogeechee estuary St. 39, 22.IV.1971; cs/16/82/1.7/1.1 (SMF 9454) - Ogeechee estuary St. 41, 22.IV.1971; af/36/90/3.2/2.1 (SMF 9455) - Ogeechee estuary St. 51, 16.III.1971; cs/58/137/2.1/1.7 (SMF 9456) - Ogeechee estuary St. 54, 16.III.1971; af/48/82/5.4/4.1 (SMF 9457) - Ogeechee estuary St. 60, 16.III.1971; cs/69/152/4.0/3.0 (SMF 9458) - Georgia, Blackbeard Island St. BC 3, 2.XI.1972; af/14/59/2.4/1.8 (SMF 9459) - Georgia, Sapelo Island St. W, 31.V.1969; af/41/66/3.0/2.0; af/33/78/3.1/2.0 (SMF 9460) - Sapelo Island St. 2, 31.V.1969; af/37/75/2.2/1.6 (SMF 9461) - Sapelo Island St. 4b, 9.VI.1969; cs/44/137/2.0/1.4 (SMF 9462) - Sapelo Island St. S 35, 23.VI.1969; cs/37/141/2.7/2.0; cs/32/126/2.0/1.3; cs/28/114/1.8/1.3; cs/26/83/1.4/1.0; af/15/50/2.0/1.4; af/8/38/1.5/1.1 (SMF 9463) - Sapelo Island St. CJ 2, 17.VII.1969; af/58/114/4.9/3.0; af/29/95/1.8/1.2 (SMF 9464) - Sapelo Island St. CJ 3, 17.VII.1969; cs/41/145/2.2/1.5; cs/40/136/2.1/1.5; cs/39/144/2.2/1.6; cs/28/134/2.1/1.5; cs/24/90/2.0/1.4; cs/20/90/1.3/0.9; af/22/79/2.1/1.5; af/12/59/1.7/1.2 (SMF 9465) - Sapelo Island St. CJ 7, 30.VII.1969; cs/105/183/3.0/2.2 (SMF 9466) - Florida, St. Lucie, Hutchinson Island St. 2, 27°21.23'N 80°13.24'W, 5.III.1973, 10.9 m; af/28/60/4.4/2.8 (USNM 54490) — Gulf of Mexico: off Florida St. 52, 25°17.48'N 81°39.48'W, 4.VI.1983, 14 m; cs/64/156/3.2/2.0 (USNM 130187) - off Florida St. 52, 25°17.48'N 81°39.48'W, 4.VI.1983, 14 m; af/17/51/1.5/1.0 (USNM 130258) - Alabama, Mississippi Sound, St. 696, 30°02.18'N 87°52.12'W, 1.XI.1980, 21 m; af/20/50/2.3/1.6 (USNM 75464) — SW Atlantic: Brazil, State of São Paulo, São Sebastião Channel, intertidal (UNICAMP, pers. com. T.M. STEINER) — NE Pacific: Mexico, Gulf of California, Puerto Penasco, 31°18'N 113°37'W, 11.VIII.1972; cs/40/139/1.8/1.2; cs/29/105/2.0/1.3; af/26/86/1.9/1.1 (USNM 79921) - R/V EL PUMA, Gulf of California, Cortés II St. 48, 28°16.4'N 111°36.6'W, 18.III.1985, 60.2 m; af/10/43/1.5/1.0 (UNAM) — E Pacific: Panama, Venado Beach, St. 80-1, 19.III.1972, about 2 ft., muddy sand; af/18/77/1.7/1.1 (USNM Acc. No. 292580 partim) - Venado Beach, St. 80-2, 19.III.1972, about 3.5 ft., muddy sand; cs/45/153/2.4/1.7 (USNM Acc. No. 292580 partim)

Diagnosis: Proboscidial papillae mainly conical with 4-8 ridges; ailerons with rounded triangular bases; parapodia of mid-body with rounded notopodial and longer, triangular neuropodial postchaetal lobes; two simple, digitiform branchiae, situated dorsally and ventrally on parapodial bases.

Description: Body up to 335 mm long with up to 232 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 14-17 rings (fig. 58a). Proboscis with two types of papillae: 1. numerous conical papillae with 4-8 ridges; 2. isolated, broader, oval to globular papillae with 3-6 ridges; ridges U-shaped basally and V-shaped apically (figs. 58b, 59). Aileron with rounded triangular base (fig. 58c). First two parapodia uniramous; following parapodia biramous (fig. 58d-l). Two slender triangular to digitiform prechaetal lobes of about same length; notopodial lobe usually slightly wider than neuropodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia neuropodial lobe elongated, triangular and notopodial lobe shorter, rounded; neuropodial lobe in posterior parapodia slender and elongated; in last parapodia neuropodial lobe generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as notopodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated near parapodial base. Branchiae non-retractile, two simple, digitiform; starting from about 13th to 21st parapodium to near posterior end; anteriorly upper branchia better developed than lower branchia, but the latter always slightly wider; upper branchia situated dorsally on parapodial base and lower branchia on anterior side between neuropodial prechaetal lobe and ventral cirrus; best developed in mid-body region, extending beyond prechaetal lobes.

Remarks: PETTIBONE (1963) described a 370 mm long specimen with 300 segments (see "Appendix", p. 221) and EHLERS (1868) specimens with up to 310 segments.

Distribution: Western and eastern coasts of North and Central America and coast of S Brazil; intertidal to 403 m (fig. 60)

Discussion: The description and drawings of *Glycera dibranchiata* EHLERS 1868 predominantly agree with the syntypes.

Glycera knoxi KIRKEGAARD 1995

Figs. 61-63

1995 *Glycera knoxi* KIRKEGAARD: 26, fig. 13a-d [Locus typicus: W of New Zealand, 42°10'S 170°10'E; holotype: ZMUC-POL-34]

Material examined:
Type material: *Glycera knoxi*: R/V GALATHEA St. 626, W of New Zealand, 42°10'S 170°10'E, 20.I.1952, 610 m; holotype: af/53/112/4.7/3.0 (ZMUC-POL-34)

Additional material: SW Pacific: New Zealand, 36°29'S 175°28'E, 24.II.1969, 55 m; af/86/191/6.8/5.3 (NZOI G426) - 42°07.0'S 175°08.2'E, 2.XI.1979, 2619-2627 m; af/155/267/10.4/7.4 (NZOI S203) - 42°10.5'S 175°59.4'E, 3.XI.1979, 2602-2677 m; af/168/236/8.0/5.0 (NZOI S204) - 42°28.55'S 173°34.36'E, 9.XII.1982, 425-730 m; cs/140/251/7.0/5.2 (NZOI U238) - 42°44.8'S 173°34.8'E, 4.XI.1979, 465 m; cs/75/228/4.2/3.0 (NZOI S210) - 42°44.8'S 173°34.8'E, 4.XI.1979, 465 m; af/60/168/4.8/3.1 (SMF 9467) - 42°57.9'-59.1'S 178°59.8'E, 19.IX.1992, 549-602 m; af/46/116/6.1/4.2 (NZOI W258) - 43°00.10'S 179°00.01'E, 12.IX.1989, 546 m; af/42/122/3.7/2.5 (NZOI V371) - 43°25'S 179°32'E, 17.I.1968, 410 m; af/72/160/6.7/5.0 (NZOI G170) - 43°30.60'S 178°38.11'E, 6.IX.1989, 345 m; af/28/93/5.2/3.0 (NZOI V361 partim) - 43°32.0'S 175°59.4'E, 20.X.1979, 368 m; af/32/102/6.3/4.5 (NZOI S119 partim) - 43°33'S 179°07'E, 24.I.1968, 399 m; af/44/133/5.7/4.1 (NZOI G282) - 43°34'S 179°22'E, 23.I.1968, 402 m; af/51/130/4.5/3.6 (NZOI G258) - 43°35.48'S 178°59.50'E, 13.IX.1989, 385 m; af/57/104/6.7/4.6 (NZOI V373 partim) - 43°36'S 179°30'E, 22.I.1968, 406 m; af/19/76/3.5/2.5 (NZOI G244) - 43°37'S 179°07'E, 24.I.1968, 395 m; af/59/160/4.9/3.7 (NZOI G280) - 43°39.7'S 179°27.3'W, 12.III.1978, 435 m; af/21/101/4.6/3.2 (NZOI Q3A) - 43°42'S 179°01'E, 25.I.1968, 402 m; cs/63/201/5.4/4.0 (NZOI G291) - 43°44'S 179°50'E, 21.I.1968, 421 m; af/82/163/6.4/4.5 (NZOI G223) - 43°49.46'S 176°59.38'E, 14.IX.1989, 498 m; af/45/116/4.0/2.7 (NZOI V379) - 43°50.0'-50.5'S 178°59.5'-59.4'E, 15.IX.1993, 442-469 m; af/47/167/4.7/3.0 (NZOI W251) - 43°51.65'S 178°59.12'E, 13.IX.1989, 470 m; af/7/46/1.5/1.0 (NZOI V374) - 43°52'S 178°45'W, 2.II.1968, 446 m; cs/55/218/3.5/2.4 (NZOI G336) - 45°05.07'S 177°00.10'E, 14.IX.1989, 663 m; af/18/85/2.2/1.7 (NZOI V378) — Tasman Sea: New Zealand, 41°25.5'S 171°10.3'E, 25.II.1982, 172 m; af/99/185/3.4/2.7 (NZOI Q704)

Diagnosis: Proboscidial papillae mainly conical with 4-6 ridges; ailerons with triangular bases; parapodia of mid-body with more or less distinctly triangular postchaetal lobes, neuropodial lobes slightly longer than notopodial; branchiae absent.

Description: Body up to 168 mm long with up to 267 segments. Mid-body segments biannulate; anterior annulus slightly longer than posterior one. Conical prostomium consisting of about 9-11 rings (fig. 61a). Proboscis with two types of papillae: 1. numerous conical papillae with 4-6 more U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 61b, 62). Aileron with triangular base (fig. 61c). First two parapodia uniramous; following parapodia biramous (fig. 61d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia at first neuropodial lobe elongated and more or less distinctly triangular, then also notopodial lobe shaped in the same way, but always slightly shorter than neuropodial lobe; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as notopodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated termino-ventrally on parapodia. Branchiae absent.

Distribution: Sea around New Zealand; 55-2677 m (fig. 63)

Discussion: The description and drawings of *Glycera knoxi* KIRKEGAARD 1995 are not very detailed, but the holotype shows all the characteristics of the taxon.

Glycera macintoshi GRUBE 1877
Figs. 64-66

1862 *Glyceres Bianconi* PETERS in BIANCONI: 477 ["Locus typicus": Inhambane, Mosambicana; "holotype": ZMB 97] nomen nudum
1877 *Glycera Mac Intoshi* GRUBE: 50 [Locus typicus: Chefóo, China; syntypes: MPUW 287]
1878 *Glycera saccibranchis* GRUBE: 181; pl. 8, fig. 10 [Locus typicus: Talibon, Philippinen; holotype: MPUW 289]
1878 *Glycera subaenea* GRUBE: 184; pl. 8, fig. 8 [Locus typicus: Canal von Lapinig, Philippinen; lectotype (hic): ZMB Q. 4338] partim
1912 *Glycera hasidatensis* IZUKA: 246; pl. 24, figs. 14-15 [Locus typicus: West side of Hashidaté in the Gulf of Miyazu, Prov. Tango (Japan); lectotype (hic): UMUT] partim
1979 *Glycera derbyensis* HARTMANN-SCHRÖDER: 123, figs. 248-250 [Locus typicus: Derby: Steinaufschüttung an der Anlegerbrücke, Australien; holotype: HZM P-15487]

Material examined:
Type material: *Glyceres bianconi*: Moçambique, Inhambane; "holotype": af/97/207/4.9/3.0 (ZMB 97) — *Glycera macintoshi*: China, Chefóo, intertidal; 2 syntypes: af/108/131/6.0/4.0; af/107/158/5.4/3.1 (MPUW 287) — *Glycera saccibranchis*: Philippine Islands, Bohol, Talibon, 8-10 fms, rocky bottom; holotype: af/39/113/3.5/2.5 (MPUW 289) — *Glycera subaenea*: Philippine Islands, Bohol, Canal of Lapinig, VIII.1863, 8 fms, coral ground; lectotype: af/109/234/4.0/2.7 (ZMB Q. 4338) — *Glycera hasidatensis*: Japan, Prov. Tango, Gulf of Miyazu, W side of Hashidaté, 8.VII.1903; lectotype: af/67/162/4.0/2.5 (UMUT partim) — *Glycera derbyensis*: Western Australia, Derby, 17°18'S 123°38'E, 21.IX.1975, upper littoral, stone debris; holotype: cs/61/171/3.3/2.7 (HZM P-15487) - 4 paratypes: cs/65/171/4.0/2.4; cs/62/199/3.1/2.0; cs/21/115/1.6/1.2; cs/14/85/1.2/0.7 (HZM P-15488) - paratype: af/45/135/3.3/2.0 (WAM 14-79)

Additional material: SE Atlantic: R/V AFRICANA II St. 935, South Africa, 34°23.80'S 18°41.10'E, 12.III.1948, 88 m; af/46/137/3.9/2.5 (SAM A20478 partim) — SW Indian Ocean: Moçambique, Inhaca Island; cs/94/198/4.1/2.7 (SAM A20474) — E Indian Ocean: Australia, Western Australia, Exmouth Gulf, Bay of Rest, IX.1981, mudflat; cs/65/200/4.6/3.6; cs/55/177/3.0/2.1; cs/40/137/3.0/2.1; af/46/129/4.0/2.8 (WAM 63-96) - Bay of Rest, IX.1981; cs/15/96/1.2/0.8; af/15/63/1.5/1.0 (WAM 65-96) - Bay of Rest, IX.1981; af/29/115/3.7/2.8 (WAM 66-96) - Bay of Rest, IX.1981; cs/37/139/2.8/1.9; af/40/105/3.5/2.5; af/33/119/2.6/1.9; af/20/55/2.5/1.8 (WAM 69-96) - Bay of Rest, IX.1981; af/13/71/1.8/1.0 (WAM 70-96) - Bay of Rest, IX.1981; af/12/41/2.4/1.7 (WAM 73-96) - Bay of Rest, IX.1981; cs/32/120/2.0/1.2 (WAM 77-96) - Bay of Rest, IX.1981; af/26/103/2.1/1.5 (WAM 79-96) - Western Australia, North West Cape, IX.1981; af/14/61/2.0/1.3 (WAM 85-96) - North West Cape, IX.1981; cs/17/108/1.8/1.2 (WAM 89-96) — NW Pacific: Japan, Boso Peninsula, Katsuura, I.1994, 15-20 m; cs/33/143/2.5/1.8 (CBM) - Boso Peninsula,

Tateyama, 28.III.1998, subtidal, mud; cs/74/182/4.0/2.7; af/45/116/4.0/3.0 (CBM) - Boso Peninsula, Futtsu Cape, near Kisrazu, 20.X.1996, subtidal; cs/168/222/5.8/4.2; cs/132/224/5.3/4.0; cs/97/208/4.6/3.0 (CBM) - off Funabashi, Sanbanze, 28.VII.1996, subtidal; cs/117/191/5.1/3.1 (CBM) - Sanbanze, 20.V.1985, about 50 m, mud flat; cs/118/214/6.0/4.0; cs/51/97/4.8/3.3 (CBM) - Sanbanze, 20.V.1985, about 50 m, mud flat; cs/74/168/4.0/2.2 (CBM) - Tokyo Bay, Shinhamako, 5.V.1996, intertidal to subtidal, mud flat; cs/37/145/2.4/1.7; cs/34/131/2.5/1.7 (CBM) - Miura Peninsula, Koajiro Bay, 2.V.1996, intertidal, mud flat; cs/110/184/4.7/3.5 (CBM) — Sea of Japan: Japan, Kanazawa, IV.1899; cs/96/184/4.4/3.0; cs/86/181/4.6/3.0; cs/68/173/2.9/2.3; cs/42/116/3.0/2.0; af/52/124/3.6/2.4; af/49/108/3.6/2.7; af/34/98/3.0/2.0 (UMUT partim) — East China Sea: W Taiwan St. 1b/7, near Mailiao, 29.VIII.1977, tidal flat; af/14/65/1.2/0.9; af/12/60/1.8/1.2 (SMF 9476) - W Taiwan St. 1c/8, near Mailiao, 3.VIII.1977, tide flat; af/42.5/133/1.7/1.0 (SMF 9477) — South China Sea: China, Hainan, Bo Chao Hou Shui Wan, IV.1992, sandflat; af/48/125/2.8/2.0 (SMF 9478) - Hainan, Mei Xia, 8.IV.1992, middle eulittoral, sand; af/76/129/4.5/3.0; af/32/75/4.7/3.3 (SMF 9479) - Hainan, Qinglan, 8 T, 2.IV.1992, sandy mud; cs/73/166/3.2/2.2; cs/45/139/2.2/1.5; cs/28/114/1.7/1.0; cs/25/115/1.6/1.0; af/58/159/3.1/2.3; af/54/129/3.2/2.2; af/46/140/3.0/2.0; af/41/97/3.0/2.0; af/31/101/2.7/1.8; af/27/80/2.9/1.9; af/20/72/2.0/1.4 (SMF 9480) - Qinglan, QS 1, III.1992, sandflat; cs/48/148/2.8/1.9; cs/22/114/1.7/1.2; af/26/81/2.0/1.4; af/26/66/2.5/1.8; af/16/60/2.1/1.5; af/11/40/1.5/1.0 (SMF 9481) - Qinglan, QS 2, III.1992, sandflat; af/21/70/1.8/1.2 (SMF 9482) - Qinglan, QS 3, III.1992, sandflat; cs/60/157/2.8/1.9; cs/42/142/2.2/1.5; cs/17.5/83/1.2/0.7; af/54/114/2.9/1.8; af/50/113/3.0/2.0; af/22/61/2.0/1.3 (SMF 9483) - Qinglan, QZ 2, III.1992, seegrass bed; af/20/74/1.8/1.3 (SMF 9484) - Qinglan, 5.IV.1992, upper intertidal, sand; cs/63/168/3.0/1.8 (SMF 9485) - Hainan, Shalao, 3.IV.1992, sand; af/24/68/2.8/2.0 (SMF 9486) - Hainan St. 6154, 28.XI.1959, 34 m; af/18/60/3.8/2.3 (SMF 9487) - Hainan St. 6203, 14.V.1960, 27 m; af/19/69/3.8/2.2 (SMF 9488) - Hainan St. 9406, 13.IV.1962, 51 m; af/13/69/1.8/1.1 (SMF 9489) — W Pacific: Australia, Queensland, Lockhart River estuary, nr. 192, 11.I.1989, sublittoral, mud; af/67/113/3.9/2.3 (AM W25451) - Hinchinbrook Channel, nr. 27, 18.XI.1988, sandflat; cs/61/172/4.0/2.5; af/13/73/2.1/1.3 (AM W25450) - Hinchinbrook Channel, nr. 27, 18.XI.1988, sandflat; cs/52/164/3.1/2.2 (SMF 9490) - Hinchinbrook Channel, nr. 368b, 14.X.1989, sandflat; af/16/57/2.1/1.3 (SMF 9491) - Hinchinbrook Channel, nr. 395, 14.X.1989, sandflat; cs/20/77/2.0/1.2; af/11/56/1.4/0.8 (SMF 9492) - Hinchinbrook Channel, nr. 445, 3.V.1990, sandflat; cs/30/134/1.6/0.9 (AM W25606) - Hinchinbrook Channel, nr. 445, 3.V.1990, sandflat; af/49/93/3.1/1.9; af/16/74/1.3/0.8 (SMF 9493) - Hinchinbrook Channel, nr. 618, 22.X.1991, sandflat; cs/12.5/68/1.1/0.6 (AM W25458) - Hinchinbrook Channel, nr. 618, 22.X.1991, sandflat; af/17/87/1.3/0.8 (SMF 9494) - Pallarenda, nr. 256, 20.III.1989, beach, sandflat; af/27/110/2.1/1.3 (AM W25609) - Ross River estuary, nr. 246, 25.II.1989, mudflat; cs/15/86/1.4/0.8 (AM W25452) - Haughton River estuary, nr. 420, 7.XI.1989, sandflat; af/48/83/4.2/2.4 (SMF 9495) - Haughton River estuary, nr. 514, 26.IV.1991, sandflat; cs/29/123/2.5/1.8 (AM W25607) - Haughton River estuary, nr. 514, 26.IV.1991, sandflat; cs/26/114/2.2/1.3; cs/6/47/1.0/0.6 (SMF 9496) - Haughton River estuary, nr. 522, 26.IV.1991, lower intertidal, sandflat; af/9.5/52/1.3/0.8 (AM W25454) - Haughton River estuary, nr. 534, 23.VIII.1991, mudflat; cs/20/97/1.3/0.8 (AM W25455) - Haughton River estuary, nr. 540, 4.IX.1991, muddy sandflat; cs/69/153/3.0/1.5 (AM W25456) - Chunda Bay (Bowling Green Bay), nr. 252, 17.III.1989, sandflat; cs/31/129/1.5/0.8 (AM W25449) - Shoalwater Bay, Triangular Island, 1981; cs/55/173/3.3/2.4; cs/48/166/3.3/2.4; cs/33/147/3.0/2.0; cs/32/130/2.4/1.8; cs/24/92/1.6/1.1; cs/23/114/1.2/0.8; cs/21/119/1.5/1.0; cs/18/105/1.2/0.8; cs/14/84/1.0/0.7; cs/8/62/0.8/0.6; af/41/118/5.0/4.0; af/37/114/3.1/2.3; af/34/106/3.2/2.2; af/28/94/3.8/2.8; af/26/111/3.0/2.2; af/24/111/2.0/1.3; af/20/105/1.7/1.2; af/19/66/1.7/1.0; af/17/77/1.5/1.0; af/16/69/2.9/1.8; af/16/58/4.0/2.8; af/15/73/1.6/0.9; af/15/56/1.7/1.0; af/13/80/1.6/1.0; af/12/66/1.0/0.6; af/12/58/1.4/0.8; af/12/48/1.1/0.8; af/11/56/1.2/0.7; af/10/53/1.0/0.6; af/10/50/1.0/0.7; af/10/47/1.6/1.1; af/7/49/1.0/0.6 (AM W202646) — SW Pacific: Queensland, Gladstone, Calliope River St. 4, 12.II.1976; cs/69/179/4.3/3.0 (AM W10362) - Calliope River St. 5, 12.II.1976; cs/32/133/2.2/1.5 (AM W10368) - Hervey Bay, Mary River, Kangaroo Island, XII.1971, muddy; cs/49/165/3.1/2.2; af/65/130/4.4/2.5 (AM W5353) - Kangaroo Island, XII.1971, sandy mud; af/36/110/2.6/1.6 (AM W5360) — Tasman Sea: Australia, New South Wales, Hawkesbury River, Juno Beach St. 2, 30.I.1976; af/17/64/2.1/1.3 (AM W23572)

Diagnosis: Proboscidial papillae mainly conical with 3 ridges; ailerons with rounded triangular bases; in anterior parapodia only one, medially inserted, slender triangular postchaetal lobe, parapodia of mid-body with slender triangular notopodial and shorter, rounded neuropodial postchaetal lobes; 1-6 retractile, digitiform branchial rami, situated medially on anterior side of parapodia.

Description: Body up to 168 mm long with up to 234 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-12 rings (fig. 64a). Proboscis with two types of papillae: 1. numerous conical papillae with 3 U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 64b, 65). Aileron with rounded triangular base (fig. 64c). First two parapodia uniramous; following parapodia biramous (fig. 64d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly only one, medially inserted, slender triangular lobe; in following parapodia slender triangular notopodial and shorter, rounded neuropodial lobe; notopodial lobe in posterior parapodia slender and elongated; in last parapodia notopodial lobe generally shorter. Dorsal cirrus usually from 2nd parapodium, but sometimes first distinctly visible from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, 1-3 digitiform branchial rami, by secondarily ramification up to 6 rami; starting from about 11th to 24th parapodium to near posterior end; situated medially on anterior side of parapodia; best developed in mid-body region, extending beyond prechaetal lobes.

Remarks: The branchiae of some specimens (e.g. holotype of *Glycera saccibranchis*, MPUW 289; "holotype" of *Glyceres bianconi*, ZMB 97) show a secondary ramification and so up to six rami are present. OKUDA & YAMADA (1954) described specimens, as *Glycera subaenea*, which were 230 mm long with 232 segments (see "Appendix", p. 224).

Distribution: Indian Ocean, coasts of Japan, East and South China Sea, Indo-Pacific, coasts of Australia; intertidal to 397 m (fig. 66)

Discussion: *Glyceres bianconi* appears to be a manuscript name of PETERS which was published by BIANCONI

(1862). The "holotype" of this nomen nudum indicate that the taxon is a synonym of *Glycera macintoshi*.

The description of *Glycera macintoshi* GRUBE 1877 is not very detailed, but mainly agrees with the syntypes. Only a few simple, retractile, digitiform branchiae are present on the parapodia of the syntypes, which are ramified after GRUBE (1877).

The type specimens of *Glycera saccibranchis* GRUBE 1878, *Glycera subaenea* GRUBE 1878, *Glycera hasidatensis* IZUKA 1912 and *Glycera derbyensis* HARTMANN-SCHRÖDER 1979 have been examined and are referred to *Glycera macintoshi*. In *Glycera subaenea* and *Glycera hasidatensis* this is limited to only one of the type specimens, which are herewith fixed as lectotypes, whereas the other specimens belong to other taxa (*Glycera nicobarica* and *Glycera onomichiensis*). The locus typicus for *Glycera subaenea* is the 'Canal of Lapinig', as mentioned in the introduction (GRUBE 1878), and not 'Lamiguin' as reported in the original description (GRUBE 1878).

Glycera nicobarica GRUBE 1868

Figs. 67-69

1868 *Glycera nicobarica* GRUBE: 24; pl. 3, figs. 1, 1a-b [Locus typicus: no locality details; GRUBE (1870a): Nicobaren; holotype: NHMW 990]

1879 *Glycera decipiens* MARENZELLER: 140; pl. 6, figs. 3, 3a [Locus typicus: Bucht von Miya, Südjapan; syntypes: NHMW 981, NHMW 983, HZM V-1090]

1885 *Glycera amboinensis* MCINTOSH: 345; pl. 42, figs. 6-7 [Locus typicus: near Amboina (Indonesia); holotype: BMNH 1885.12.1.240]

1912 *Glycera chirori* IZUKA: 245; pl. 2, fig. 8; pl. 24, fig. 13 [Locus typicus: Kasaoka in Prov. Bittyu (Japan); syntypes: UMUT]

1912 *Glycera hasidatensis* IZUKA: 246; pl. 24, figs. 14-15 [Locus typicus: West side of Hashidaté in the Gulf of Miyazu, Prov. Tango (Japan); paralectotype (hic): UMUT] partim

Material examined:

Type material: *Glycera nicobarica*: R/V NOVARA, Nicobar Islands; holotype: af/137/330/6.2/4.2 (NHMW 990) — *Glycera decipiens*: S Japan, Bay of Miya, Nagoya; 13 syntypes: cs(af+pf)/46(41+5)/130(104+26)/4.5/2.8; cs/26/122/4.2/2.8; af/90/155/7.3/4.8; af/60/109/8.0/5.2; af/57/143/5.0/3.0; af/50/146/5.5/3.8; af/49/127/3.1/2.0; af/45/87/6.0/3.9; af/40/112/4.2/3.0; af/35/97/5.0/3.0; af/32/108/4.5/3.1; af/31/94/4.0/2.2; af/13/68/3.0/1.7 (NHMW 981) - syntype: af/72/155/6.0/4.4 (HZM V-1090) - Japan; 8 syntypes: cs/58/175/5.0/4.2; cs/55/160/5.1/3.7; cs/44/125/3.1/2.3; cs/33/120/3.3/2.4; cs/25/138/2.4/1.7; af/36/104/5.0/3.6; af/28/121/3.0/2.1; af/23/68/3.0/2.0 (NHMW 983) — *Glycera amboinensis*: HMS CHALLENGER, Expedition 1873-76, Indonesia, near Amboina, 15 fms; holotype: af(af+mf)/35.4(4.4+31)/114(24+90)/3.2/2.3 (BMNH 1885.12.1.240) — *Glycera chirori*: Bichu, Seto Inland Sea, Kasaoka, shore, muddy; 3 syntypes: cs/147/222/8.8/6.1; cs/135/235/8.9/5.7; cs/110/232/8.9/6.2 (UMUT) — *Glycera hasidatensis*: Japan, Prov. Tango, Gulf of Miyazu, W side of Hashidaté, 8.VII.1903; paralectotype: cs/54/161/3.9/2.6 (UMUT partim)

Additional material: SE Atlantic: South Africa, St. TRA.80, 32°23.00'S 17°48.00'E, 4.II.1953, 143 m, green mud; af/49/117/7.2/4.7 (SAM A20473) — W Indian Ocean: Madagascar, Cap Saint-Sebastian, 12°28.00'S 48°43.00'E, 4.VI.1969, 30 m; af/17/72/2.0/1.3 (SMF 9497) - N Nosy Mitsio St. 1, 12°38.40'S 48°33.20'E, 8.V.1969, 50m, muddy sand; af/39/110/2.5/1.8 (SMF 9498) - Bay of Ambaro, 13°04.00'S 48°47.00'E, 29.II.1968, 19 m, sandy mud; af/23/57/3.4/2.0; af/15/62/3.1/2.0 (SMF 9499) - Bay of Ambaro, St. Bouee, 13°16.00'S 48°42.00'E, 15.II.1969, 20 m, mud sand; af/29/86/3.0/2.0; af/18/62/1.7/1.0; af/13/57/2.3/1.5 (SMF 9500) - NW of Bay of Ampasindava, 13°32.55'S 48°05.45'E, 28.VIII.1967, 25 m, mud; af/23/111/2.6/1.7 (SMF 9501) - Bay of Ampasindava, Anja Nozana, 13°36.00'S 48°11.00'E, 18.IV.1969, 45 m; af/22/64/3.8/2.4 (SMF 9502) - Nosy Iranja St. 2, 13°37.00'S 47°50.00'E, 26.II.1968, 80 m; af/12/63/2.1/1.3 (SMF 9503) - Banc Pracel, near Chesterfield Islands St. 32, 15°54.30'S 45°50.30'E, 12.IV.1970, 33 m, sand; cs/49/152/3.2/2.5; cs/28/136/2.0/1.3 (SMF 9504) - Banc Pracel, near Chesterfield Islands St. 31, 16°02.30'S 45°49.45'E, 12.IV.1970, 22 m, sand; af/49/168/3.1/2.3; af/39/118/3.3/2.2; af/10/53/2.0/1.3 (SMF 9505) - Banc Pracel, near Chesterfield Islands St. 30, 16°04.15'S 45°49.30'E, 12.IV.1970, 17 m, sand; af/33/134/2.3/1.8 (SMF 9506) - Banc Pracel, near Chesterfield Islands St. 5, 16°22.00'S 44°07.30'E, 9.IV.1970, 26 m, sand; af/47/126/3.0/2.0; af/43/147/3.3/2.5; af/39/143/3.7/2.5; af/33/104/3.2/2.4 (SMF 9507) - Banc Pracel, near Chesterfield Islands St. 26, 17°09.45'S 43°59.00'E, 11.IV.1970, 21 m, sand; cs/52/160/3.9/2.8; af/15/84/1.3/0.8 (SMF 9508) - Banc Pracel, near Chesterfield Islands St. 24, 17°10.30'S 43°50.30'E, 11.IV.1970, 35 m, sand; af/40/131/2.6/1.7; af/36/92/4.6/2.9; af/13/61/2.2/1.4; af/12/60/2.6/1.8 (SMF 9509) — Arabian Sea: India, Ratnagiri, Mirya Bander, 16.II.1969, shore, muddy sand; af/49/98/2.5/1.7 (SAM A20469) — Bay of Bengal: Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — E Indian Ocean: Malaysia, Matang, mangrove, subtidal, sandy mud; af/28/100/2.8/1.7 (CBM) - Sumatra; cs/35/154/4.0/2.6 (ZMB F. 1826) — NW Pacific: USS ALBATROSS St. 3767, Japan, off Honshu Island, Miyagi, Oboro Saki, 5.VI.1900, 14-18 fms, gray sand; cs/62/142/4.8/3.6; cs/38/104/4.7/3.5; cs/31/132/2.4/1.7; cs/28/121/2.8/1.9; af/42/120/3.9/2.6; af/35/124/3.2/2.5 (USNM 5338) - USS ALBATROSS St. 3775, Miyagi, Kinkazan, 5.VI.1900, 57 fms, green mud and sand; af/27/77/4.6/3.2 (USNM 5355) - Tohoku Region, Sendai, Ohtsuchi Bay, 14.X.1996, 70-100 m, sand and rubble; af/34/103/4.1/2.8 (CBM) - Boro Peninsula, Chyosi-misaki, 19.IV.1996, 0-1 m, sand and rubble; cs/82/167/5.0/3.3 (CBM) - off Funabashi, Sanbanze, 20.V.1985, about 50 m, mud flat; cs/76/177/6.0/4.1; cs/22/113/2.5/1.7; af/45/112/5.0/3.0; af/33/83/3.9/2.7; af/20/66/3.8/2.7; af/19/57/3.1/2.2; af/16/55/4.0/2.5; af/11/53/2.2/1.3; af/9/51/2.2/1.4; af/9/41/2.7/1.6 (CBM) - Sanbanze, 20.V.1985, about 50 m, mud flat; af/35/104/4.3/3.0; af/30/111/5.0/3.5 (CBM) - Kojima Bay; cs/139/188/6.0/3.6; cs/59/172/5.2/3.5 (NSM) - Tomioka Bay, Amakusa, 10.X.1975, 30-50 m, muddy bottom; cs/36/139/3.5/2.4; af/30/102/2.8/2.0 (CBM) - Japan, 1900; af/40/141/4.0/2.2 (USNM 5356) - S Japan; cs/66/171/5.3/4.0; cs/44/132/5.0/3.5 (HZM V-1100) — East China Sea: China, Qingdao, VIII.1985; cs/103/222/5.2/3.9; af/66/135/4.2/2.7 (AM W199682) — South China Sea: China, Amoy; cs/100/180/5.2/3.6 (USNM 22533) - Hainan St. 6154, 28.XI.1959, 34 m; af/24.5/82/2.6/1.4 (SMF 9510) - Hainan St. 6155, 8.III.1960, 90 m; af/85/155/4.8/2.8 (SMF 9511) - Hainan St. 6173, 29.I.1959, 85 m; af/51/127/3.0/1.5 (SMF 9512) -N Borneo; af/30/60/4.2/2.9 (MPUW) - N Borneo; af/223/189/7.6/5.2 (ZMB Q. 4327)

Diagnosis: Proboscidial papillae mainly conical with 3 ridges; ailerons with triangular bases; all parapodia with slender triangular notopodial and shorter, rounded neuropodial postchaetal lobes; simple, retractile, digitiform branchiae, situated medially on anterior side of parapodia.

Description: Body up to 223 mm long with up to 330 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 9-11 rings (fig. 67a). Proboscis with two types of papillae: 1. numerous conical papillae with 3 U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 67b, 68).

Aileron with triangular base (fig. 67c). First two parapodia uniramous; following parapodia biramous (fig. 67d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and slender triangular, distinctly longer than rounded neuropodial lobe; notopodial lobe in posterior parapodia slender and elongated; in last parapodia notopodial lobe generally shorter. Dorsal cirrus usually from 2nd parapodium, but sometimes first distinctly visible from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated termino-ventrally on parapodia. Branchiae retractile, simple, digitiform; starting from about 16th to 30th parapodium to near posterior end; situated medially on anterior side of parapodia; best developed in mid-body region, extending beyond prechaetal lobes.

Distribution: Indian Ocean, coasts of Japan, East and South China Sea, Indo-Pacific; intertidal to 143 m (fig. 69)

Discussion: The description of *Glycera nicobarica* GRUBE 1868 is not very detailed, but predominantly corresponds with the holotype.

The type specimens of *Glycera decipiens* MARENZELLER 1879, *Glycera amboinensis* MCINTOSH 1885 and *Glycera chirori* IZUKA 1912 have been examined and are believed to be identical to *Glycera nicobarica*.

One of the type specimens of *Glycera hasidatensis* IZUKA 1912 does not correspond with the original description. The herewith fixed paralectotype indicate that the taxon is also a synonym for *Glycera nicobarica*, whereas the lectotype is referred to *Glycera macintoshi*.

Glycera madagascariensis BÖGGEMANN & FIEGE 2001
Figs. 70-72

2001 *Glycera madagascariensis* BÖGGEMANN & FIEGE: 36, figs. 5, 9a-b, 10 [Locus typicus: Baie des Ambaro, Madagascar; holotype: SMF 9468]

Material examined:
Type material: *Glycera madagascariensis*: Madagascar, Bay of Ambaro, 13°01.00'S 48°37.00'E, 29.II.1968, 25 m, sand; holotype: cs/47/159/2.3/1.7 (SMF 9468) - Madagascar, Nosy Komba, 13°25.00'S 48°21.00'E, 9.VIII.1968, 15 m; paratype: cs/44/177/2.2/1.6 (SMF 9469)

Additional material: W Indian Ocean: Madagascar, Nosy Bé region, Canyon du Banc cinq mètres St. 1, 13°26.00'S 47°58.00'E, 6.V.1968, 74 m, sand and corals; af/15/67/1.6/1.0 (SMF 9470) - Canyon du Banc cinq mètres St. 2, 6.V.1968, 64 m, sand and corals; cs/21/122/1.6/1.1 (SMF 9471) - Madagascar, Banc Pracel, near Chesterfield Islands St. 8, 16°21.00'S 43°50.30'E, 9.IV.1970, 35 m, sand; cs/39/129/1.7/1.3; cs/22/119/1.5/1.0 (SMF 9472) - Chesterfield Islands St. 4, 16°24.00'S 44°18.15'E, 9.IV.1970, 20 m, sand; cs/12/91/1.0/0.5 (SMF 9473) - Chesterfield Islands St. 20, 17°10.15'S 43°22.00'E, 11.IV.1970, 49 m, sand; cs/43/158/1.9/1.3; cs/30/131/2.0/1.3 (SMF 9474) - Chesterfield Islands St. 20, 17°10.15'S 43°22.00'E, 11.IV.1970, 49 m, sand; cs/31/150/2.1/1.4 (USNM 186546) - Chesterfield Islands St. 16, 17°37.15'S 43°20.00'E, 10.4. 1970, 48 m, sand; af/24/106/2.6/1.7 (SMF 9475)

Diagnosis: Proboscidial papillae mainly conical with 3 ridges; ailerons with triangular bases; parapodia of mid-body with neuropodial prechaetal lobes distinctly longer and broader than notopodial lobes; notopodial postchaetal lobes blunt triangular and slightly longer than rounded neuropodial lobes; branchiae absent.

Description: Body up to 47 mm long with up to 177 segments. Mid-body segments more or less triannulate; two anterior annuli of about same length, posterior annulus slightly longer. Conical prostomium consisting of about 12-15 rings (fig. 70a). Proboscis with two types of papillae: 1. numerous conical papillae with 3 U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 70b, 71). Aileron with triangular base (fig. 70c). First two parapodia uniramous; following parapodia biramous (fig. 70d-l). Two slender triangular to digitiform prechaetal lobes, neuropodial lobe always distinctly longer and wider than notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe much shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and blunt triangular, slightly longer than rounded neuropodial lobe; in posteriormost parapodia notopodial lobe generally shorter and rounded. Dorsal cirrus distinctly visible from 3rd parapodium (2nd in largest specimen), conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as notopodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated termino-ventrally on parapodia. Branchiae absent.

Distribution: Northeastern coasts of Madagascar; 15-74 m (fig. 72)

Discussion: *Glycera madagascariensis* resembles *Glycera fallax* QUATREFAGES 1850 in the ailerons, prostomium, parapodia, and types of proboscidial papillae. However, the latter species has simple, retractile, blister-like branchiae, situated medially on the anterior side of the parapodia, whereas branchiae are absent in *Glycera madagascariensis*.

Glycera fallax QUATREFAGES 1850
Figs. 73-75

1850 *Glycera fallax* QUATREFAGES: 358 [Locus typicus: no locality details, QUATREFAGES (1866): St. Vaast (France); type: lost]

?1865 *Glycera mitis* JOHNSTON: 185 [Locus typicus: Scotland; ? holotype: BMNH]
?1865 *Nereis tricolor* JOHNSTON: 185 ["Locus typicus": South Devon (England); ? "holotype": BMNH 1852.10.15.4] nomen nudum
1866 *Glycera decorata* QUATREFAGES: 181 [Locus typicus: Bréhat (France); syntypes: MNHN A119]
1866 *Glycera gigantea* QUATREFAGES: 183 [Locus typicus: Bréhat (France); syntypes: MNHN A121]
1866 *Glycera fallax* – QUATREFAGES: 184; pl. 2, fig. 2; pl. 9, fig. 18 [Locus typicus: St. Vaast (France); type: lost]
1867 *Glycera vesiculosa* PARFITT: 234, figs. 1-5 [Locus typicus: Exmouth, Devonshire (England); type: presumed lost]
1868 *Glycera folliculosa* EHLERS: 658 [Locus typicus: Neapel (Italy); holotype: HZM PE-605]

Material examined:
Type material: *Glycera mitis*: Scotland; ? holotype: cs(af+mf+pf)/335(168+99+68)/374(184 +81+109)/7.2/5.0 (BMNH) — *Nereis tricolor*: Locality unknown; ? "holotype": cs(af+pf)/471(257+214)/312(172+140)/9.6/7.0 (BMNH 1852.10.15.4) — *Glycera decorata*: France, Bréhat; 2 syntypes: af/178/301/9.0/6.0; af/60/135/6.5/5.0 (MNHN A119) — *Glycera gigantea*: France, Bréhat, sand; 3 syntypes: cs/391/432/11.0/7.0; cs/345/331/9.5/6.0; af/202/230/8.8/5.0 (MNHN A121) — *Glycera folliculosa*: Italy, Naples, 1860; holotype: af/195/243/5.8/4.0 (HZM PE-605)

Additional material: NE Atlantic: Scotland, Cumbrae, Firth of Clyde; cs/632/407/12.0/9.1 (BMNH 1863.11.8.7) - Cumbrae; af/44/132/4.6/3.2 (BMNH 1863.11.8.8 partim) - England, Plymouth, 1911; cs/293/376/7.2/4.8; af/248/200/9.4/6.4 (MNHN A435) - Plymouth; cs/332/355/9.6/5.9 (BMNH 1921.5.1.2240) - England, Cornwall, Polperro, sandy bottom; cs/365/343/11.0/8.0 (BMNH 1866.8.20.26) - Polperro; cs/138/300/6.6/5.0 (BMNH 1862.5.5.1) - France, St. Vaast; af/346/315/6.1/4.2 (ZMB Q. 4318) - Bréhat; cs/102/302/4.8/3.7 (MNHN A119 partim) - Roscoff; af/42/118/4.1/2.8 (ZMB Q. 4314) - Roscoff; cs/122/294/8.0/5.6 (ZMB Q. 4316) - Roscoff; af/189/334/9.4/6.3 (ZMB 4835) — Mediterranean Sea: France, Marseille; cs/147/234/7.0/5.0 (MNHN A117 partim) - Italy, Licola, Gulf of Gaeta, 1966-68; cs/80/215/6.0/4.4 (SMF 9513) - Naples, 1873; cs/74/231/4.0/2.7; af/75/198/4.2/2.7; af/71/202/5.0/3.5; af/50/133/4.0/2.4; af/49/115/5.0/3.5 (SMF 9514) - Naples; cs/232/305/7.8/4.8 (ZMB Q. 4334) - Naples; cs/177/311/6.8/4.8; cs/130/287/5.9/4.0; cs/129/244/5.4/4.0; cs/123/277/6.5/4.8; cs/123/258/6.2/4.4; cs/98/290/7.1/5.0; cs/95/223/5.2/3.7; af/136/207/6.3/4.4; af/123/165/6.3/4.5; af/115/194/5.2/3.7; af/103/164/6.2/4.2; af/99/193/6.0/4.3; af/86/213/5.0/3.2; af/85/134/7.1/5.2 (ZMB Q. 4337 partim) - Villafranca; af/119/235/5.0/3.2; af/39/105/4.3/2.8 (ZMB Q. 4315) - Messina; cs/155/287/5.7/4.0; af/130/168/6.8/5.0 (SSM 658) - Messina; af/119/177/6.7/4.5; af/80/148/6.4/4.5; af/40/109/4.5/3.0 (SSM 689) - Messina; cs/95/266/4.7/3.0; cs/90/218/7.0/5.0; af/69/124/5.2/3.5; af/54/133/5.0/3.0 (SSM 690) - Lesina; cs/73/249/4.0/2.5 (ZMB Q. 4346) - Mediterranean Sea; af/148/156/5.0/4.0; af/75/135/5.0/3.0; af/75/103/4.2/3.0; af/36/88/6.5/4.8 (HZM PE-606)

Diagnosis: Proboscidial papillae mainly conical with 3 ridges; ailerons with triangular bases; parapodia of mid-body with rounded, sometimes slightly blunt triangular notopodial and slightly shorter, rounded neuropodial postchaetal lobes; simple, retractile, blister-like branchiae, situated medially on anterior side of parapodia.

Description: Body up to 632 mm long with up to 432 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 14-17 rings (fig. 73a). Proboscis with two types of papillae: 1. numerous conical papillae with 3 U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 73b, 74). Aileron with triangular base (fig. 73c). First two parapodia uniramous; following parapodia biramous (fig. 73d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe slightly elongated and rounded, sometimes slightly blunt triangular, slightly longer than rounded neuropodial lobe; in posteriormost parapodia notopodial lobe generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, blister-like; starting from about 17th to 25th parapodium to near posterior end; situated medially on anterior side of parapodia.

Distribution: Atlantic coasts of Europe, Mediterranean Sea; 15-300 m (fig. 75)

Discussion: QUATREFAGES (1850) originally described only the nervous system of *Glycera fallax*. The later morphological descriptions are made on the basis of some illustrations, since the type material was lost (QUATREFAGES 1866). One of these drawings (pl. 2, fig. 2) shows a blister-like branchia on the anterior side of a parapodium, typical for the taxon.

The description of *Glycera mitis* JOHNSTON 1865 is rather vague. JOHNSTON (1865) reported that the specimen from Scotland was one foot long (30.5 cm) with over 240 segments and lacked branchiae and jaws. The three fragments of the possible holotype in the BMNH, together 33.5 cm long with 374 segments, are referred to *Glycera fallax*. The retractile branchiae and jaws are inconspicuous and may be overlooked. The present label carries the name *Glycera siphonostoma*. This name can probably be traced back to MCINTOSH (1905), who was of the opinion that *Glycera mitis* resembled *Glycera dubia* which was identical for him with *Glycera siphonostoma*.

A similar situation applies to *Nereis tricolor*. JOHNSTON (1865) mentioned this taxon, together with *Glycera rouxii*, as a synonym for *Glycera dubia*. One of the specimens in the BMNH seems to be the "holotype" of this nomen nudum, because the original label carry the following inscription: *Glycera siphonostoma Glycera dubia* ? BLAINV. *Glycera Rouxii* ? AUD. & EDW., Locality unknown. The probable "holotype" indicate that the taxon is a synonym of *Glycera fallax*.

The type specimens of *Glycera decorata* QUATREFAGES 1866, *Glycera gigantea* QUATREFAGES

1866 and *Glycera folliculosa* EHLERS 1868 have been examined and are believed to be identical to *Glycera fallax*.

The type material of *Glycera vesiculosa* PARFITT 1867 cannot be located, but the description and drawings show that this taxon should be referred to *Glycera fallax*.

Glycera sagittariae MCINTOSH 1885
Figs. 76-78

1885 *Glycera sagittariæ* MCINTOSH: 346; pl. 42, fig. 8; pl. 22A, fig. 10 [Locus typicus: off Arrou Islands (Indonesia); holotype: BMNH 1885.12.1.241]

Material examined:
Type material: *Glycera sagittariae*: HMS CHALLENGER St. 194, off Arrou Islands, 4°33'S 129°58'E, 29.IX.1874, 200 and 360 fms, volcanic detritus; holotype: af(af+mf)/105.4(8.4+97)/193(24+169)/5.0/3.0 (BMNH 1885.12.1.241)

Additional material: W Pacific: Papua New Guinea, Bismack Sea, Madang, Nagada Harbour, Jais Aben Resort, 5°09.30'S 145°48'E, 24.VIII.1993, 10-20 cm; cs/19/120/2.0/1.2; af/8/45/1.2/0.7 (USNM 168385) - Nagada Harbour, Christensen Research Institut, 5°09.30'S 145°48'E, 26.VIII.1993, 0.5 m; cs/39/153/2.4/1.6 (USNM 168386) - Bismarck Archipelago, Ralun; cs/52/205/2.8/1.8; af/119/232/6.0/4.2; af/100/211/5.1/3.5; af/86/218/5.0/3.0; af/67/185/3.9/2.3; af/50/110/5.1/3.4; af/42/150/2.5/1.7; af/41/119/3.4/2.1 (ZMB 2963 partim) - Ralun; af/75/164/4.0/2.9; cs/60/199/3.0/1.8; af/57/156/2.8/1.7 (ZMB 6559) - Ralun Reef, 1897; cs/140/283/4.4/3.2; af/158/327/5.4/3.6; af/59/179/2.6/1.5 (BMNH 1936.11.2.1-3) - Solomon Islands, Florida Islands, Tetel Island, 10.VII.1965, between mid-tide level and low water mark, muddy sand; cs/113/332/5.0/3.0 (BMNH 1970.410) - Solomon Islands, Guadalcanal, Fintry Point, 7.X.1965, low water mark, silty sand with shell gravel; af/183/322/5.2/3.8 (BMNH 1970.418) - Fintry Point, 10.X.1965, above mid-tide level, silty sand with shell gravel; cs/56/237/3.0/1.6; af/91/224/4.4/2.7 (BMNH 1970.419 partim) - Guadalcanal, Graham Point, 24.IX.1965, low water mark, silty sand with shell gravel; cs/309/520/5.1/3.0; cs/200/429/4.3/2.6; cs/117/336/4.0/2.6; af/265/401/5.0/2.6; af/246/376/5.2/3.3; af/113/285/4.2/2.7; af/101/134/5.2/3.2; af/75/174/3.2/2.1 (BMNH 1970.417)

Diagnosis: Proboscidial papillae mainly conical with 3 ridges; ailerons with triangular bases; parapodia of mid-body with rounded, sometimes slightly blunt triangular postchaetal lobes, notopodial lobes usually slightly broader and longer than neuropodial lobes; simple, retractile, digitiform branchiae, situated medially on anterior side of parapodia.

Description: Body up to 309 mm long with up to 520 segments. Mid-body segments biannulate; anterior annulus slightly longer than posterior one. Conical prostomium consisting of about 10-13 rings (fig. 76a). Proboscis with two types of papillae: 1. numerous conical papillae with 3 U-shaped ridges, sometimes with additional subterminal straight, median, longitudinal ridge; 2. isolated, broader, oval to globular papillae without ridges (figs. 76b, 77). Aileron with triangular base (fig. 76c). First two parapodia uniramous; following parapodia biramous (fig. 76d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia both lobes slightly elongated and rounded, sometimes slightly blunt triangular; notopodial lobe usually slightly longer and wider than neuropodial lobe; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, simple, digitiform; starting from about 20th to 30th parapodium to near posterior end; situated medially on anterior side of parapodia; best developed in mid-body region, extending beyond prechaetal lobes.

Distribution: Sea around New Guinea; intertidal to 659 m (fig. 78)

Discussion: The description and drawing of *Glycera sagittariae* MCINTOSH 1885 predominantly agree with the holotype. MCINTOSH (1885) reported two different loci typici; one in the introduction (p. xxviii: "off Tetuaroa Islands" (ca. 17°01'S 149°33'W)) and another in the description (p. 346: "Dredged on September 29, 1874, off Arrou Islands."). The latter appears to be correct, since it corresponds with station 194 of the HMS CHALLENGER expedition and the label accompanying the holotype.

Glycera unicornis SAVIGNY 1818
Figs. 79-81

1818 *Glycera unicornis* SAVIGNY: 315 [Locus typicus: locality unknown (? Egypt); holotype: MNHN A120]
1832 *Glycère de Meckel* AUDOUIN & MILNE EDWARDS: pl. 14, figs. 1-4
?1832 *Glycère de Roux* AUDOUIN & MILNE EDWARDS: pl. 14, figs. 5-10
1833 *Glycera Meckelii* AUDOUIN & MILNE EDWARDS: 263 [Locus typicus: Vendée (France); type: lost]
?1833 *Glycera Rouxii* AUDOUIN & MILNE EDWARDS: 264 [Locus typicus: Marseille (France); type: presumed lost]
1865 *Glycera nigripes* JOHNSTON: 188 [Locus typicus: Scotland; lectotype (hic): BMNH] partim
1866 *Glycera Mulleri* QUATREFAGES: 172 [Locus typicus: Groënland; syntype: MNHN A117] partim
1866 *Glycera peruviana* QUATREFAGES: 177 [Locus typicus: Callao, côtes du Pérou (Peru); holotype: MNHN A120]
1867 *Glycera Goësi* MALMGREN: 184; pl. 15, fig. 81a, c-d, f [Locus typicus: Bahusiam et Väderöarne (Bohuslän and Väder Island, Sweden); syntypes: SSM Type 2464, SSM 6232, 6233]
?1870a *Glycera Mauritiana* GRUBE: 61 [Locus typicus: Mauritius; holotype: MPUW 288]

1898 *Glycera Mesnili* SAINT-JOSEPH: 339; pl. 19, figs. 146-148; pl. 20, figs. 149-157 [Locus typicus: Croisic près de l'Estacade et à Pen-bron (France); type: presumed lost]

1918 *Glycera guinensis* AUGENER: 389; pl. 5, figs. 128-130; textfig. 48 [Locus typicus: Fernando Poo (Equatorial Guinea), Westafrika (Senegal, Gorée; Liberia, Seß Town; Elfenbeinküste, Wappu; Nigeria, Lagos; Französ.-Kongo, Nyanga-Fluß); syntypes: HZM V-1113, 1116, 1105, 1104, 1119, 1117]

Material examined:

Type material: *Glycera unicornis*: locality unknown (? Egypt); holotype: af/31/103/4.4/2.3 (MNHN A120) — *Glycera nigripes*: no locality details; lectotype: af/94/184/6.3/4.2 (BMNH) - Scotland; 2 paralectotypes: af/50/129/6.0/3.8; af/45/91/7.1/4.6 (BMNH partim) — *Glycera mulleri*: Greenland; syntype: af/40/102/5.2/3.2 (a) (MNHN A117 partim) — *Glycera peruviana*: Peru, Callao; holotype: af(af+mf)/107(69+38)/224(156+68)/9.0/5.3 (MNHN A120) — *Glycera goesi*: Sweden, Bohuslän, Väderöarne, 30 fms; 5 syntypes: af/155/202/5.9/4.2; af/125/146/5.5/3.8; af/84/96/8.0/5.5; af/47/150/5.0/3.9; af/43/140/6.0/4.4 (SSM Type 2464) - syntype: af/55/97/6.1/4.2 (SSM 6232) - Bohuslän; 2 syntypes: af/131/199/8.7/5.0; af/75/155/5.0/3.0 (SSM 6233) — *Glycera mauritiana*: Mauritius; holotype: af(af+mf)/255(113+142)/266(141+125)/7.0/5.0 (MPUW 288) - 3 parapodia and part of the proboscis (ZMB Q. 4324 partim) — *Glycera guinensis*: Equatorial Guinea, Fernando Poo (= Bioko), 30 m; 2 syntypes: af/67/145/5.3/3.5; af/32/129/2.9/1.9 (HZM V-1113) - Senegal, Gorée, 23 m; syntype: af/35/125/3.8/2.3 (HZM V-1116) - Liberia, Sasstown, 30 m, mud; syntype: af/20/65/4.2/2.7 (HZM V-1105) - Ivory Coast, Wappu, 44 m, blue mud; syntype: af/28/119/3.0/1.9 (HZM V-1104) - Nigeria, Lagos, 17 m; syntype: af/24/70/4.0/2.5 (HZM V-1119) - Gabun, Nyanga River, 13 m, soft bottom; 3 syntypes: af/21/65/2.3/1.4; af/18/69/2.6/1.2; af/17/61/3.0/1.8 (HZM V-1117)

Additional material: N Atlantic: R/V SEVASTOPOL 5 St. 1157, 64°56'N 24°25'W, 31.VII.1957, 155 m; af/55/144/5.0/2.8 (MSU) — NE Atlantic: Ireland, Dingle Bay; cs/102/224/9.1/6.2 (ZMB Q. 4321) - France, Le Croisic, VI.1908; af/60/117/6.0/4.0 (MNHN A500) - Le Croisic, 17.VII.1908; cs/153/243/8.0/5.0; cs/139/248/7.2/4.5; af/101/132/7.8/4.7 (MNHN A435) - Le Croisic, jetty, 1908; cs/164/243/8.0/5.0 (MNHN A435) - Le Croisic, 7.V.1925; cs/121/245/7.8/5.0 (MNHN A500) - France, Bretagne, 1922; af/25/60/5.0/2.6 (MNHN A347) - Spain, Fauna 1 St. 70A, 37°07.08'N 7°12.27'W - 37°08.91'N 7°13.50'W, 23.VII.1989, 22 m, muddy sand; af/74/162/5.1/3.1 (MNCN) - Fauna 1 St. 66A, 36°30.90'N 6°22.10'W - 36°32.04'N 6°23.80'W, 22.VII.1989, 25-28 m, muddy sand; af/135/212/7.5/4.5; af/76/150/9.0/6.7 (MNCN) — North Sea: Norway, 1884; af/58/159/5.2/4.0 (SMF 9515) - R/V SENCKENBERG D 1990 St. 24 vV, 55°13.01'N 6°11.70'E, 12.VIII.1990, 49.2 m; af/54/160/4.5/2.8 (SMF 9516) - R/V SENCKENBERG DEB 1987 St. 6 vV, 55°00.02'N 6°20.02'E, 24.V.1987, 46 m; af/83/202/8.0/6.0; af/35/141/3.0/1.8; af/26/119/3.0/1.8; af/12/74/2.2/1.5 (SMF 4870) - R/V SENCKENBERG DEB 1987 St. 1 vV, 54°39.90'N 6°00.00'E, 24.V.1987, 43 m; cs/71/195/5.4/4.1; af/16/61/1.8/1.2 (SMF 4869) - Sweden, Gullmar Fjord E of Lysekil, Göteborg and Bohus, 11°E 58°N; af/62/121/5.0/3.0 (ZMB Q. 4320) - Bohuslän-Dyngö, 1862, 15 fms; af/160/73/6.4/4.0 (SSM 994) — Mediterranean Sea: R/V EUROPE Depro96 St. 11, 42°09.40'N 3°22.50'E, 24.IV.1996, 350 m; af/65/121/8.0/5.5; af/54/120/4.8/3.0; af/48/110/7.0/4.8; af/17/44/6.2/4.5 (SMF 9517) - R/V EUROPE Depro96 St. 9, 42°20.00'N 3°27.10'E, 21.IV.1996, 650-725 m; af/50/116/7.0/5.0; af/50/100/7.0/5.0; af/41/90/6.0/4.0 (SMF 9518) - R/V EUROPE Depro96 St. 18, 42°21.50'N 3°22.80'E, 27.IV.1996, 534-634 m; af/63/120/7.0/5.0; af/62/129/6.5/4.8; af/50/119/5.7/4.0; af/25/84/3.0/1.8; af/23/62/3.1/2.2; af/18/78/2.6/1.8 (SMF 9519) - R/V EUROPE Depro96 St. 10, 42°24.60'N 3°16.20'E, 22.IV.1996, 100-101 m; af/41/135/4.7/3.0; af/32/82/5.0/3.5 (SMF 9520) - France, Banyuls-sur-Mer, 4.X.1995, mud; af/47/120/6.8/4.5 (SMF 9521) - Banyuls-sur-Mer St. 2, 42°30.00'N 3°11.75'E, 18.III.1997, 80 m, mud; cs/28/140/3.1/2.0 (SMF 9522) - Banyuls-sur-Mer St. 3, 42°29.90'N 3°10.75'E, 18.III.1997, 65 m, mud; af/33/129/3.8/2.3; af/13/81/1.7/1.0 (SMF 9523) - Banyuls-sur-Mer St. A, 42°29.92'N 3°09.22'E, 20.III.1997, 35 m, mud; cs/28/112/2.7/1.7 (SMF 9524) - Banyuls-sur-Mer St. B, 42°30.17'N 3°09.48'E, 20.III.1997, 40 m, mud; cs/23/112/2.9/2.0; af/22/108/2.2/1.6 (SMF 9525) - Banyuls-sur-Mer St. I, 42°29.19'N 3°08.87'E, 24.III.1997, 32 m, mud; cs/42/151/4.1/2.7; cs/26/145/2.2/1.6; af/24/109/3.0/2.1 (SMF 9526) - Banyuls-sur-Mer St. III, 42°29.75'N 3°09.00'E, 24.III.1997, 32 m, mud; cs/28/133/4.0/2.8 (SMF 9527) - Banyuls-sur-Mer, 4.IX.1997, 30 m, mud; cs/17/116/2.1/1.3 (SMF 9528) - Banyuls-sur-Mer, 4.IX.1997, 30 m, mud; cs/32/130/4.0/2.7; cs/22/130/2.1/1.3; af/40/126/5.1/3.6; af/20/94/2.8/1.8; af/17/98/2.0/1.2 (SMF 9529) - Banyuls-sur-Mer, 4.IX.1997, 60 m, mud; cs/52/180/4.6/3.2 (SMF 9530) - Banyuls-sur-Mer, 4.IX.1997, 81 m, mud; cs/29/149/3.6/2.4 (SMF 9531) - Banyuls-sur-Mer, 9.IX.1997, 30 m, mud; af/33/143/4.0/2.6; af/14/89/1.9/1.3 (SMF 9532) - Banyuls-sur-Mer, 9.IX.1997, 30 m, mud; cs/22/103/3.1/1.9; af/54/171/4.7/3.2; af/48/134/6.0/4.1; af/30/129/3.7/2.4; af/16/91/2.3/1.6; af/16/59/5.0/3.4 (SMF 9533) - Banyuls-sur-Mer, 9.IX.1997, 50 m, mud; cs/12/80/2.1/1.3 (SMF 9534) - Banyuls-sur-Mer, 9.IX.1997, 60 m, mud; cs/66/146/6.1/4.6; cs/40/149/4.2/2.7; af/25/112/3.0/2.0; af/17/95/2.2/1.4; af/14/94/1.8/1.2 (SMF 9535) - France St. 1106, 43°28'N 7°02'45"W, 5 miles of Cannes, 21.V.1901, 712 m; af/47/108/5.2/3.9 (MNHN A416) - Italy, Portofino, 24.III.1914; af/24/125/3.0/1.8 (SMF 9536) - Gulf of Gaeta, Licola, 1966-68; cs/25/120/2.6/1.8; af/40/121/5.5/3.8; af/39/129/4.4/2.9; af/34/102/6.0/4.0; af/30/94/4.2/2.8; af/27/124/3.2/2.1; af/24/87/4.0/2.6; af/23/100/3.1/2.0; af/20/84/3.1/2.1; af/19/82/3.1/2.0; af/17/83/3.4/2.1; af/12/59/3.4/2.0 (SMF 9537) - Naples; cs/169/232/7.2/4.2; cs/160/217/6.5/3.2 (MNHN A120) - R/V METEOR 25 St. 2 KG, 40°09.75'N 16°47.65'E, 17.V.1993, 45.1 m; af/58/141/4.1/2.6; af/3/22/1.0/0.6 (SMF 9538) - R/V METEOR 25 St. 3 KG, 40°09.52'N 16°48.79'E, 17.V.1993, 105.9 m; cs/11/68/0.9/0.5; af/25/83/4.1/2.7; af/10/65/1.8/1.1; af/9.3/51/1.4/0.8; af/8/41/1.0/0.6 (SMF 9539) - R/V METEOR 25 St. 7 KG, 40°09.50'N 16°51.27'E, 17.V.1993, 301 m; af/14/41/1.7/0.8 (SMF 9540) - R/V METEOR 25 St. 4 KG, 40°09.37'N 16°49.51'E, 17.V.1993, 157.9 m; af/49/126/3.8/2.1 (SMF 9541) - R/V METEOR 25 St. 6 KG, 40°09.44'N 16°50.64'E, 17.V.1993, 257 m; af/35/88/5.0/3.4 (SMF 9542) - R/V METEOR 25 St. 8 KG, 40°09.32'N 16°52.90'E, 17.V.1993, 415 m; cs/50/170/4.6/3.0 (SMF 9543) - R/V METEOR 25 St. 12 Ku, 39°50.55'N 17°44.17'E - 39°49.97'N 17°44.64'E, 19.V.1993, 490-484 m; af/80/160/8.0/5.8 (SMF 9544) - Greece, N Aegean Sea, Kalloni Gulf, St. K 8a, V.1995, 10 m; cs/9/80/1.1/0.7; cs/5/34/0.8/0.5; af/7/41/1.0/0.7 (SMF 9545) - Central Aegean, Evoikos Gulf, St. EB 5, XI.1983, 63 m; af/46/117/4.0/2.7; af/28/111/2.8/1.9 (SMF 9546) - R/V CALYPSO St. 9, S coast of Crete, Kali Limines, 34°55.00'N 24°50.00'E, 6.IV.1964, 180-190 m; af/33/129/3.7/2.0 (SMF 5314) - R/V CALYPSO St. 10, S coast of Crete, Kali Limines, 6.IV.1964, 170 m; af/14/62/3.0/2.0 (SMF 5310) - Cyprus, SLMB217 SLM688, 27.X.1968; af/31/114/4.4/2.5 (HUJ) - R/V METEOR 25 St. 30 Ku, 33°02.58'N 34°56.09'E - 33°03.21'N 34°56.68'E, 2.VI.1993, 235-299 m; af/22/71/2.2/1.6; af/7/41/1.0/0.6 (SMF 9547) - R/V METEOR 25 St. 35 KG1, 33°01.66'N 34°50.73'E, 2.VI.1993, 1024 m; cs/6/38/0.8/0.5 (SMF 9548) - R/V METEOR 25 St. 35 KG2, 33°01.65'N 34°50.71'E, 2.VI.1993, 1022 m; af/8/42/1.5/1.0 (SMF 9549) - R/V METEOR 25 St. 33 KG, 33°01.55'N 34°54.92'E, 2.VI.1993, 400 m; af/7.5/49/1.3/0.8 (SMF 9550) - R/V METEOR 25 St. 34 KG, 33°01.25'N 34°53.63'E, 2.VI.1993, 718 m; af/9.5/57/1.0/0.6; af/6/37/1.0/0.6 (SMF 9551) - R/V METEOR 25 St. 29 KG, 33°01.25'N 34°55.83'E, 2.VI.1993, 152.6 m; af/19/96/2.4/1.5; af/14.4/78/1.5/0.9; af/12/60/1.2/0.8; af/8.5/78/1.0/0.6; af/7.3/47/0.8/0.5; af/6/41/0.8/0.5 (SMF 9552) - R/V METEOR 25 St. 30 KG, 33°01.22'N 34°55.51'E, 2.VI.1993, 229 m; af/6/39/1.0/0.6; af/2/19/0.8/0.4 (SMF 9553) - R/V METEOR 25 St. 27 KG, 33°00.05'N 34°59.69'E, 2.VI.1993, 53.8 m; af/38/144/4.0/2.5; af/12/53/2.0/1.1; af/7/34/1.2/0.6; af/6.2/38/1.2/0.7; af/6/37/0.9/0.5 (SMF 9554) - R/V METEOR 25 St. 26 ES, 32°59.84'N 35°02.23'E, 2.VI.1993, 35.8 m; af/7.4/37/0.7/0.4 (SMF 9555) - R/V METEOR 5 St. 51 Ku, 32°03.10'N 34°31.40'E - 31°58.90'N 34°27.30'E, 26.I.1987, 309 m; af/52/68/4.3/2.4 (SMF 4424) - R/V METEOR 5 St. 50 Ku, 32°02.38'N 34°35.05'E

- 32°00.95'N 34°34.52'E, 26.I.1987, 95-103 m; af/19/79/2.4/1.5 (SMF 4531) - Israel, off Nabi Rubin St. 798, 20.VIII.1949, 90 m; af/13/85/1.8/1.2; af/12/68/1.7/1.1 (HUJ) - Askelon, SLMB156 Poly 360, 20.XII.1968, 128 m, gray mud; af/88/194/8.3/6.0 (HUJ) - SLMB86 P325; af/30/108/3.0/2.2; af/23/101/2.3/1.7 (HUJ) - #34, leg. B. Galil; af/22/78/2.2/1.3 (HUJ) - Egypt, Sinai, El Arish, SLM6008 p1037, 27.VIII.1969, 25 fms; cs/16/102/1.5/1.0 (HUJ) - R/V METEOR 25 St. 25 KG2, 32°00.58'N 31°53.30'E, 1.VI.1993, 200.6 m; af/47/138/4.4/3.0 (SMF 9556) - R/V METEOR 25 St. 25 Ku, 32°00.54'N 31°53.70'E - 32°00.55'N 31°52.61'E, 1.VI.1993, 199-196 m; af/8.5/57/1.2/0.7 (SMF 9557) - R/V METEOR 25 St. 25 ES, 32°00.43'N 31°53.64'E - 32°00.45'N 31°52.85'E, 1.VI.1993, 195-191 m; af/20/68/3.0/1.9; af/7/41/1.0/0.6 (SMF 9558) - R/V CALYPSO St. 1884, 33°55'N 10°20'E, 19.IV.1965, 25 m, muddy sand; cs/22/130/2.1/1.6 (SMF 9559) - R/V CALYPSO St. 1943, 34°01'N 10°21'E, 2.V.1965, 24 m, sandy mud; af/32/132/3.4/2.5; af/30/124/3.3/2.4 (SMF 9560) - R/V CALYPSO St. 1927, 34°04'N 10°19'E, 29.IV.1965, 24 m; af/38/121/4.4/3.0 (SMF 9561) - R/V POSEIDON 172-4 St. 718 KD, Cimoloe, 37°00.430'N 12°39.060'E - 37°00.450'N 12°39.110'E, 7.V.1990, 158-198 m; af/38/87/6.3/4.6 (SMF 9562) — E Atlantic: Togo, St. 95, 6°N 1°18'E, 6.X.1963, 45 m, muddy sand; cs/45/182/4.2/2.6 (MNHN A476) - Togo, St. 56, 6°4'N 1°46'E 4.X.1963, 60 m, muddy sand; cs/25/166/2.7/1.8 (MNHN A476) - Dahomey, St. 28, 6°11'N 2°12'E, 3.X.1963, 40 m, sand and mud; af/29/128/3.0/2.1 (MNHN A476) - Dahomey, St. 112, 6°10'N 2°17'E, 8.X.1963, 50 m, gray mud; af/69/158/4.0/2.5 (MNHN A476) - Dahomey, St. 113, 6°12'N 2°26'E, 8.X.1963, 48 m, gray mud; af/47/108/6.0/4.3 (MNHN A476) — SE Atlantic: R/V AFRICANA II St. 935, South Africa, 34°23.80'S 18°41.10'E, 12.III.1948, 88 m; af/106/140/7.0/5.0 (SAM A20478 partim) — W Indian Ocean: R/V VALDIVIA 1898-99 ST. 242, Tanzania, Dar es Salaam, 6°34'S 39°35'E, 404 m, mud; af/42/134/3.6/2.0 (ZMB 4521)

Diagnosis: Proboscidial papillae mainly conical with 3 ridges; ailerons with triangular bases; parapodia of mid-body with two slender triangular postchaetal lobes of about same length; 1-2 retractile, digitiform branchial rami, situated medially on anterior side of parapodia.

Description: Body up to 255 mm long with up to 266 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-13 rings (fig. 79a). Proboscis with two types of papillae: 1. numerous conical papillae with 3 U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 79b, 80). Aileron with triangular base (fig. 79c). First two parapodia uniramous; following parapodia biramous (fig. 79d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia both lobes elongated and slender triangular, of about same length; neuropodial lobe sometimes only blunt triangular; neuropodial lobe in posterior parapodia shorter and rounded; in last parapodia notopodial lobe generally shorter. Dorsal cirrus from 2nd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, 1-2 digitiform branchial rami; starting from about 16th to 30th parapodium to near posterior end; situated medially on anterior side of parapodia; best developed in mid-body region, extending beyond prechaetal lobes.

Remarks: The branchiae of some specimens (e.g. SAM A20478 and some of the syntypes of *Glycera guinensis* HZM V-1113 and 1119) show a secondary ramification with three or sometimes four rami (holotype of *Glycera peruviana*, GRUBE 1870b) present. DAY (1967) discovered a 350 mm long specimen from the intertidal region (see "Appendix", p. 242) and FAUVEL (1914) a specimen, described as *Glycera rouxii*, from 4380 m (see "Appendix", p. 242).

Distribution: East Atlantic, coasts of Greenland, Norwegian Sea, North Sea, Mediterranean Sea, west Indian Ocean and Callao, Peru (*Glycera peruviana*, MNHN A120); 9-1024 m (fig. 81)

Discussion: The description of *Glycera unicornis* SAVIGNY 1818 is rather vague, but mainly corresponds to the holotype. The locus typicus is unknown, but further descriptions can be found in the "Description de l'Égypte" (SAVIGNY 1822, 1826).

The type specimens of *Glycera meckelii* AUDOUIN & MILNE EDWARDS 1833, *Glycera rouxii* AUDOUIN & MILNE EDWARDS 1833 and *Glycera mesnili* SAINT-JOSEPH 1898 are probably lost, but the descriptions and drawings show that they belong to *Glycera unicornis*. *Glycera rouxii* is only questionably referred to this taxon, because it was said to lack branchiae (AUDOUIN & MILNE EDWARDS 1833), but these may have been retracted.

The type specimens of *Glycera nigripes* JOHNSTON 1865, *Glycera peruviana* QUATREFAGES 1866, *Glycera goësi* MALMGREN 1867, *Glycera mauritiana* GRUBE 1870 and *Glycera guinensis* AUGENER 1918 have been examined and are believed to be identical to *Glycera unicornis*. The type specimens of *Glycera nigripes* are herewith fixed as a lectotype and paralectotypes. It might be possible that the locus typicus of *Glycera peruviana* is inaccurate, because the place of discovery is distant from the common distribution. In addition, the synonymization of *Glycera mauritiana* is questionable because of the poor condition of the holotype.

One of the type specimens of *Glycera mulleri* QUATREFAGES 1866 is not in accordance with the original description and appears to belong to *Glycera unicornis*. The other syntypes are here referred to *Glycera capitata*.

Glycera ovigera SCHMARDA 1861
Figs. 82-84

1861 *Glycera ovigera* SCHMARDA: 95; pl. 30, fig. 239; textfigs. a-c, k [Locus typicus: Neu-Seeland, Hafen von Auckland; syntypes: NHMW 992]

Material examined:
Type material: *Glycera ovigera*: New Zealand, Auckland Harbour, mud and sand under stones; 3 syntypes: cs/160/227/6.9/4.6; cs/159/252/6.0/4.0; cs/89/189/5.2/3.7 (NHMW 992)

Additional material: E Indian Ocean: Australia, Western Australia, Dampier Archipelago, Mermaid Sound, 15.XII.1981; cs/90/195/4.0/2.5 (WAM 54-96) — SE Indian Ocean: Western Australia, Bunbury, Fisherman's Jetty, 30.VIII.1968, sand; cs/323/309/8.0/5.6; cs/172/218/6.0/4.4 (AM W4281) - Fisherman's Jetty, VII.1965, coarse sand with very little shell or debris; af/191/179/10.0/6.9; af/124/154/8.3/5.9; af/40/62/10.3/8.0 (AM W5599) - Fisherman's Jetty, 30.VII.1965; cs/293/302/7.8/5.3; cs/158/299/7.0/4.5 (WAM 480-75) - Bunbury Harbour; cs/118/205/5.0/3.0 (WAM 59-96) - Busselton, VII.1961; cs/343/328/11.2/8.0 (WAM 60-96) - Albany, N end of Oyster Harbour, 21.VII.1963, 3 fms, mud; cs/56/98/7.1/5.0 (WAM 321-75) - Oyster Harbour, 0.5 mile S of Green Is., 22.VII.1963, sand and shells; cs/96/239/5.1/3.8 (WAM 58-96) - Oyster Harbour, channel 1 mile N of Green Is., 20.VII.1963, mud; cs/162/266/5.2/3.0; af/97/221/4.8/2.9; af/48/137/4.0/2.4 (WAM 61-96) - 1.25 miles S of King R. Bridge, 20.VII.1963, fine dark mud; af/54/131/4.7/3.4 (WAM 80-76) - South Australia, Port Lincoln, I.1968; af/43/103/6.2/4.5 (MV F 80201) - Port Lincoln Jetty, 1.VIII.1967; cs/179/288/12.0/7.0/; af/34/104/4.6/3.0 (MV F 80219) - Spencer Gulf, Port Pirie St. 795, 8 km off Fifth Creek, 33°12.00'S 137°55.00'E, 1979, 7.3 m, sand; af/41/161/4.8/3.7 (AM W21774) - Gulf of St. Vincent; cs/264/311/14.0/10.0 (ZMB 11047) - Onkaparinga estuary, 1973; cs/127/217/4.4/3.0; cs/102/198/4.5/3.5; cs/89/155/5.2/3.9; cs/51/180/3.3/2.1; cs/46/103/3.6/2.5; af/141/230/4.6/3.0; af/94/120/8.7/6.0; af/91/164/7.4/4.7; af/60/115/4.2/2.9; af/42/95/3.5/2.3; af/33/104/2.4/1.7 (AM W6067) - West Island St. E11, 1973, 5 m, under stones; af/86/127/5.2/3.7 (AM W5996) — SW Pacific: Australia, Queensland, Moreton Bay, Dunwich St. 7, 20.IX.1962; af/70/170/3.9/2.3; af/69/146/4.2/2.6 (AM W19064) - Jacob's Well, 27°47'S 153°21'E, 2.IX.1970; cs/130/240/4.7/2.8 (MV F 80189) - New Zealand, 34°53.55'S 173°16.95'E, 23.XII.1978, 46 m; cs/65/176/3.2/2.2 (NZOI O328B) - Auckland, Hauraki Gulf; cs/338/251/9.3/6.2; af/195/143/11.0/9.0 (ZMB 4863) - Wellington Harbour, Kaiwharawhara, c. 41°16'S 174°47'E, III.1993; cs/43/117/4.1/2.7 (NZOI Z8231) - Wellington; cs/118/194/5.2/3.3 (MNHN A120) - 41°25'S 175°01.2'E, 11.V.1960, 54 m; af/76/154/7.5/5.7 (NZOI C485) - 45°20'S 170°53.5'E, 8.X.1962, 21 m; af/48/138/5.2/3.5 (NZOI B564) — Tasman Sea: Australia, New South Wales, Lower Myall River, 9.II.1974, littoral; af/99/217/4.4/2.8 (AM W6120) - Pittwater, Careel Bay, 1.XI.1974, lower *Zostera*; cs/155/282/8.0/4.7 (AM W8207) - Georges River, Tom Ugly's Bridge St. 86, 4.5 m, muddy sand; cs/141/267/8.2/5.7; af/166/228/8.5/5.4; af/96/159/9.0/6.0; af/52/160/4.3/2.7 (AM W7564) - Tom Ugly's Bridge St. 85, 6 m, muddy sand; cs/169/289/8.5/5.3 (AM W7569) - Victoria, Corner Inlet, Yanakie, Red Bluff, 24.III.1974, rocks; af/75/110/8.0/5.0 (MV F 80198) - Venus Bay, E of Eagle's Nest, I.1966; cs/252/260/7.2/5.0; cs/200/266/6.3/4.5; cs/189/274/5.9/3.9 (MV F 80187) - Venus Bay, W of Eagle's Nest, I.1966; cs/237/300/8.0/5.2; cs/217/278/6.0/4.0; cs/157/268/6.8/4.5 (MV F 80186) - 4 miles E of Cape Paterson, 23.XII.1967; cs/251/289/7.6/5.0 (MV F 80194) - Western Port St. 1741, 38°29.30'S 145°22.83'E, 26.XI.1973, 6 m; cs/93/248/5.5/4.0 (MV F 80230) - Western Port St. 1741, 38°29.30'S 145°22.83'E, 26.XI.1973, 6 m; af/31/121/3.0/1.9 (MV F 80227) - Western Port St. 1740, 38°28.59'S 145°22.38'E, 26.XI.1973, 6 m, silt; cs/35/144/3.2/2.4 (MV F 80229) - Western Port St. 1737, 38°29.19'S 145°21.34'E, 26.XI.1973, 6 m, sand-silt-clay; cs/110/257/6.0/4.0 (MV F 80226) - Western Port St. 1709, 38°14.36'S 145°20.62'E, 8.I.1974, intertidal, sand; cs/60/199/4.5/3.3 (MV F 80228) - Western Port St. 1717, 38°25.53'S 145°20.38'E, 10.I.1974, intertidal, sand; af/41/121/5.3/4.0 (MV F 80225) - Port Phillip Bay, Carrum, 8.II.1955; cs/230/262/8.7/5.5 (MV F 80190) - 4 km N of St. Kilda, 7.II.1980, beach, sandy-mud; cs/199/303/9.5/7.1 (AM W17062) - Port Phillip Bay, Hobson Bay St. 138/5, 37°52'S 144°57'E, 1975-76, 10-11 m, sand with some silt; af/138/195/7.0/4.8; af/47/154/3.8/2.2 (MV F 80221) - Central Port Phillip Bay St. 925/5, 38°02.3'S 144°55.0'E, 4.XII.1970, 22 m, silt-clay; cs/129/271/7.2/5.1 (MV F 80224) - Port Phillip Bay St. 902/3, 37°53.00'S 144°55.00'E, 21.IX.1970, 10 m, sandy-silt-clay; cs/42/156/3.9/2.7 (AM W16288) - Northern Port Phillip Bay St. 210-212, 37°58'S 144°54'E, 22.III.1963, 8-11 fms, silty clay to sandy silt; af/71/145/6.2/4.0 (MV F 41645) - Port Phillip Bay St. 962/3, 38°11.70'S 144°51.50'E, 21.IX.1970, 24 m, silt clay; af/36/120/4.2/3.0; af/28/92/2.6/1.7 (AM W16289) - Altona Bay, 37°53'S 144°51'E, 5.X.1927; cs/422/314/13.0/8.0 (MV F 41110) - Central Port Phillip Bay St. 914/1, 38°00.0'S 144°49.8'E, 9.VI.1971, 18 m, sand; cs/96/249/5.6/4.4; cs/72/224/5.0/3.1 (MV F 80222) - Port Phillip Bay, off Indented Head, Bellarine Peninsula St. 289, 38°10'S 144°48'E, 14.V.1963, 2 fms, sand; af/40/125/3.6/2.2 (MV F 41651) - Port Phillip Bay St. 974/5, 38°16.30'S 144°44.70'E, 13.X.1971, 5 m, sand; af/43/106/4.0/2.5 (AM W16291) - Port Phillip Bay, Geelong Arm St. 919/5, 38°02.3'S 144°34.5'E, 18.XI.1971, 6 m, silt-sand; cs/119/239/6.0/4.2; cs/93/233/5.0/4.0; af/28/117/2.2/1.5; af/8/35/2.8/1.8 (MV F 80223) - HMAS KIMBLA Cruise 80-K-5 St. 57, western Bass Strait, 39°06.3'S 143°21.1'E, 8.X.1980, 60 m; af/20/73/1.6/1.0 (MV F 80211 partim) - Tasmania, Huon River, 5.II.1976; af/60/106/5.7/4.0 (AM W11063) - Huon River, 5.II.1976; cs/183/242/8.0/4.7 (AM W11064) - Huon River, 3.II.1976; cs/56/150/3.0/2.1 (AM W12223) - New Zealand, 37°07.25'S 174°40.12'E, 13.V.1980, intertidal; af/22/99/2.9/1.8 (NZOI O525 partim) - 40°45.2'S 173°53.7'E, 19.III.1965, 24 m; af/49/91/8.0/5.0 (NZOI F175) - 41°06.2'S 173°46.8'E, 14.XII.1983, 22 m; cs/76/173/6.9/5.3 (NZOI T555) - 41°07.9'S 174°22.2'E, 8.II.1983, 18 m; af/92/136/11.2/8.2 (NZOI T494)

Diagnosis: Proboscidial papillae mainly conical with Y-shaped ridge in combination with 1-3 vertical ridges apically; ailerons with triangular bases; parapodia of mid-body with two slender triangular postchaetal lobes of about same length; bush-like branchiae, situated dorsally on posterior side of parapodial bases.

Description: Body up to 422 mm long with up to 328 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 11-13 rings (fig. 82a). Proboscis with two types of papillae: 1. numerous conical papillae with Y-shaped ridge in combination with 1-3 vertical ridges at the tip; 2. isolated, broader, oval to globular papillae without ridges (figs. 82b, 83). Aileron with triangular base (fig. 82c). First two parapodia uniramous; following parapodia biramous (fig. 82d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia both lobes elongated and slender triangular, of about same length; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, slightly shorter than postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, bush-like when completely developed and everted; starting from about 15th to 25th parapodium to near posterior end; situated dorsally on posterior side of parapodial bases; best developed in mid-body region, about as long as prechaetal lobes.

Distribution: Sea around Australia and New Zealand; intertidal to 290 m (fig. 84)

Discussion: The description and drawings of *Glycera ovigera* SCHMARDA 1861 are not very detailed, but

mainly correspond with the syntypes. However, the originally reported egg-cords on the parapodia (SCHMARDA 1861) are indeed the branchiae and the "branchial structures" are actually the dorsal cirri.

Glycera pacifica KINBERG 1865
Figs. 85-87

1865 *Glycera pacifica* KINBERG: 245 [Locus typicus: Mare pacificum: insula Foua (Eimeo, Society Islands); holotype: SSM Type 504]
1879 *Glycera opisthobranchiata* MARENZELLER: 139; pl. 6, fig. 2 [Locus typicus: Südjapan; syntypes: NHMW 991]
1901 *Glycera rugosa* JOHNSON: 409; pl. 10, figs. 101-102 [Locus typicus: Puget Sound: Neah Bay, Salmon Bay, ? vicinity of Port Townsend (Washington, U.S.A.); syntype: LACM-AHF Poly 1852]
1910 *Glycera pacifica* – KINBERG: 59; pl. 21, fig. 7b-c, f-g
1912 *Glycera misakiensis* IZUKA: 242; pl. 24, figs. 7-9 [Locus typicus: Koajiro, Misaki in Prov. Sagami (Japan); type: presumed lost]
?1919a *Glycera basibranchia* CHAMBERLIN: 14 [Locus typicus: Laguna Beach, California (U.S.A.); type: presumed lost]

Material examined:
Type material: *Glycera pacifica*: R/V EUGENIE St. 1227, Society Islands, Eimeo, barrier reef, 20.IX.1852, 1-2 feet, between corals; holotype: af(af+2mf)/49(3+18+28)/145(9+45+91)/4.5/3.0 (SSM Type 504) — *Glycera opisthobranchiata*: South Japan; 2 syntypes: cs/198/297/8.0/5.9; af/118/189/7.0/4.8 (NHMW 991) — *Glycera rugosa*: U.S.A., Washington, Puget Sound, Pleasant Beach, 26.V.1899, intertidal; syntype: af/78/124/7.0/5.0 (LACM-AHF Poly 1852)

Additional material: NW Pacific: Japan, Boso Peninsula, Katsuura, I.1994, 15-20 m; cs/43/185/2.9/2.2 (CBM) - Katsuura, 31.III.1998, subtidal, among rubble; cs/332/294/9.0/5.7 (CBM) - Misaki; cs/231/283/6.8/4.7 (UMUT) — Sea of Japan: Russia, Vladivostok, Vostok Bay, Primorski Krai, 29.VIII.1978; cs/61/188/4.0/2.4 (MCZ) - Japan, Kanazawa, IV.1899; af/85/179/4.4/3.3 (UMUT partim) — NE Pacific: Canada, British Columbia, Hecate Strait, Stephens Island; cs/281/256/8.0/5.0; cs/221/268/13.1/9.4 (USNM 35950) - British Columbia, Vancouver Island, Clayoquot; cs/300/278/10.2/6.3; cs/218/229/8.7/5.3; cs/134/260/6.0/4.6 (USNM 35973) - Vancouver Island, Departure Bay, VI.1935, low tide, sand; cs/196/231/7.8/5.0; cs/182/229/7.4/5.3 (BMNH 1935.12.19.102-3) - U.S.A., Washington, San Juan Islands, Sucia Island, Echo Bay, 6.VIII.1940; af/95/162/7.6/5.6 (USNM 29237) - San Juan Islands, Orcas Island, East Sound, 23.VII.1935; cs/187/253/7.2/4.3; af/55/102/6.1/4.5 (USNM 29238) - San Juan Islands, Brown Island, 4.VIII.1940; cs/285/279/9.1/7.1 (USNM 29242) - San Juan Islands; cs/283/260/13.5/10.2 (USNM 33390) - California, Pacific Grove, China Point; cs/150/251/7.5/4.7 (MCZ 2296) - California, off Corona del Mar, 25.VII.1935, 7-10 fms; cs/173/215/9.0/6.4; cs/75/215/3.3/2.8; af/174/182/6.4/4.5; af/124/208/5.9/4.2; af/100/144/6.1/4.8; af/60/135/5.0/3.8; af/27/69/3.2/2.3; af/21/79/2.6/2.0 (USNM 35968) - USS ALBATROSS St. 4322, California, vicinity of San Diego, Point La Jolla Station, S 34° E 3.2 miles 7.III.1904, 110-199 fms, soft green mud with shells; af/291/234/11.7/7.0 (USNM 17459) - San Diego, Point Loma, 11.IV.1961, intertidal; cs/227/267/8.3/5.9; cs/122/178/7.9/5.2; cs/113/196/8.1/5.3 (USNM 35942) - Point Loma, 2.II.1956, intertidal; af/122/197/8.1/6.2 (USNM 35959) - California; af/210/256/9.3/7.2 (USNM 35967) - California; cs/274/313/9.0/6.4; cs/257/289/9.0/6.9; cs/208/298/6.0/4.7; cs/175/293/8.0/5.3; cs/158/280/6.7/4.6; cs/150/264/6.0/4.3; cs/149/276/8.0/5.4; cs/149/265/6.0/4.0; cs/79/143/6.4/4.6; af/162/188/9.0/6.5; af/158/167/8.3/6.0; af/140/214/6.0/4.2; af/138/203/6.7/4.4; af/117/186/6.6/4.5; af/115/196/6.4/4.6; af/98/147/6.1/4.4; af/97/156/5.2/3.2; af/93/135/6.5/4.5; af/70/121/6.2/4.5 (USNM 35975) - Mexico, Gulf of California, Sonora, off Choya, 31°16'N 113°42'W, 21.I.1967, 70 ft, sandy mud; af/40/96/4.0/2.6; af/23/72/2.6/2.0 (USNM Acc. No. 297534) - Sonora, 1970; af/75/150/6.3/4.6 (USNM Acc. No. 297534) - R/V EL PUMA, Cortés II St. 47, 28°17.8'N 111°37.1'W, 18.III.1985, 36.9 m; af/25/105/2.9/2.0 (UNAM) - R/V EL PUMA, Cortés II St. 49C, 26°59.2'N 111°58.3'W, 19.III.1985, 28.9 m; af/13/77/2.1/1.4; af/11/58/1.6/1.0 (UNAM) - R/V EL PUMA, Gulf of California, Cortés II St. 3, 25°02.4'N 108°31.7'W, 10.III.1985, 32 m; cs/8/49/1.2/0.7 (UNAM) — E Pacific: Panama, Farfan Beach, St. 134-3, sieving on flat adjacent to channel, 6.IV.1973, intertidal; cs/23/123/3.0/2.0 (USNM Acc. No. 292580 partim) - S.Y. ST. GEORGE, Perlas Islands, E side of St. Elmo Bay, IV.-X.1924, 6-9 fms, sand and shell; af/90/130/4.8/3.0 (BMNH 1932.12.24.115)

Diagnosis: Proboscidial papillae mainly conical with 3 ridges; ailerons with triangular bases; parapodia of mid-body with two slender triangular postchaetal lobes of about same length; bush-like branchiae, situated dorsally on posterior side of parapodial bases.

Description: Body up to 332 mm long with up to 313 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-12 rings (fig. 85a). Proboscis with two types of papillae: 1. numerous conical papillae with 3 U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 85b, 86). Aileron with triangular base (fig. 85c). First two parapodia uniramous; following parapodia biramous (fig. 85d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia both lobes elongated and slender triangular, of about same length; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, slightly shorter than postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, bush-like when completely developed and everted; starting from about 12th to 22nd parapodium to near posterior end; situated dorsally on posterior side of parapodial bases; best developed in mid-body region, about as long as prechaetal lobes.

Remarks: HILBIG (1994a) described a 350 mm long specimen, as *Glycera americana*, with 300 segments (see "Appendix", p. 234), IZUKA (1912) a specimen, as *Glycera misakiensis*, with 328 segments and BERKELEY (1966) a possible specimen of this taxon, as *Glycera americana*, from 2196 m (see "Appendix", p. 231).

Distribution: Northwestern, northeastern and central Pacific; intertidal to 364 m (fig. 87)

Discussion: The descriptions and drawings of KINBERG's (1865, 1910) *Glycera pacifica* predominantly agree with the holotype. KINBERG (1865) reported the 'Insula Foua' as the locus typicus, whereas the official list of the R/V EUGENIE expedition noted 'Eimeo Island' (Society Islands) for station 1227 (type locality according to KINBERG and in agreement with the label of the holotype).

The type specimens of *Glycera opisthobranchiata* MARENZELLER 1879 and *Glycera rugosa* JOHNSON 1901 have been examined and are now referred to *Glycera pacifica*. The locus typicus of *Glycera opisthobranchiata* is not known. This material was collected by Dr. A. v. RORETZ, from Yokohama, Kyushu and Shikoku Island (MARENZELLER 1879).

The type specimen of *Glycera misakiensis* IZUKA 1912 is presumed lost, but the description and drawings show clearly that this taxon is a synonym of *Glycera pacifica*.

The description of *Glycera basibranchia* CHAMBERLIN 1919 is not very detailed. He mentioned parapodia with two triangular postchaetal lobes and dorsocaudal branchiae. The only species with these characteristics are *Glycera pacifica*, *Glycera americana*, *Glycera ovigera*, *Glycera cinnamomea* and *Glycera russa*. The branchiae of *Glycera pacifica* are bush-like (once fully developed!) and not digitiform, as reported by CHAMBERLIN (1919a), but this appears to be the only one of these five species which occurs in California.

Glycera americana LEIDY 1855
Figs. 88-90

1855 *Glycera americana* LEIDY: 147; pl. 11, figs. 49-50 [Locus typicus: Point Judith, Atlantic City, and Great Egg Harbor (U.S.A.); type: presumed lost]

1857 *Glycera cirrata* GRUBE: 176 [Locus typicus: Rio Janeiro (Brazil); type: lost] partim

1865 *Glycera lævis* KINBERG: 245 [Locus typicus: Mare atlanticum long. occid. 40°55', lat. austr. 22°30' (Brazil); syntypes: SSM 662-665]

1865 *Glycera jucunda* KINBERG: 245 [Locus typicus: Portus urbis Rio Janeiro (harbour of Rio de Janeiro, Brazil); syntypes: SSM 666-667]

1882 *Glycera edentata* HANSEN: 17; pl. 5, figs. 16-18 [Locus typicus: no locality details, AUGENER (1934): Bai von Rio de Janeiro (Brazil); holotype: NNM 1399]

1882 *Glycera incerta* HANSEN: 17; pl. 5, figs. 19-22 [Locus typicus: no locality details, AUGENER (1934): Bai von Rio de Janeiro (Brazil); holotype: NNM 1400]

1899 *Glycera longissima* ARWIDSSON: 23; pl. 1, figs. 15-19 [Locus typicus: Melinca, Guaytecas (oder Chonos) -Inseln (44° s. Br.), Westküste Patagoniens (Chile); holotype: UUZM 314]

1899 *Glycera chilensis* ARWIDSSON: 24; pl. 1, figs. 20-21; pl. 4, fig. 56 [Locus typicus: Talcahuano, Chile (ungefähr 36°40'S); holotype: UUZM 316]

1910 *Glycera lævis* – KINBERG: 58; pl. 21, figs. 4b, f-g; 5b, e-g

1910 *Glycera jucunda* – KINBERG: 58; pl. 21, fig. 6b, f-g

1962a *Glycera heteropoda* HARTMANN-SCHRÖDER: 110, figs. 102-103 [Locus typicus: Penco (Chile); holotype: HZM P-15330]

Material examined:

Type material: *Glycera laevis*: R/V EUGENIE St. 180, Atlantic 40°55'W 22°30'S, 20-30 fms; syntype: af(af+3mf)/29(2+13+12+2)/92(13+50+26+3)/3.2/2.0 (SSM 662) - syntype: af(af+2mf)/44(2+39+3)/126(12+107+7)/4.0/2.7 (SSM 663) - syntype: af/84/181/3.0/2.0 (SSM 664) - syntype: af(af+2mf)/65(28+23+14)/201(90+59+52)/3.0/1.8 (SSM 665) — *Glycera jucunda*: R/V EUGENIE St. 221, Rio de Janeiro Harbour, 4 fms; 2 syntypes: af(af+2mf)/29(4+12+13)/108(24+42+42)/4.5/3.0; af/24/84/2.6/2.2 (SSM 666) - syntype: 1 specimen in bad condition (SSM 667) — *Glycera edentata*: Rio de Janeiro; holotype: cs(af+pf)/113(8+95)/266(30+236)/5.5/4.0 (NNM 1399) — *Glycera incerta*: Rio de Janeiro, 1881; holotype: af(af+mf)/53.5(6.5+47)/147(33+114)/3.1/1.8 (NNM 1400) — *Glycera longissima*: Chile, W coast of Patagonia, Guaytecas (or Chonos) -Islands (44°S), Melinca, 1896, intertidal; holotype: cs/445/250/13.0/10.0 (UUZM 314) — *Glycera chilensis*: Chile, Talcahuano (about 36°40'S), 30.IX.1896, 23 m, clay ground; holotype: cs/239/217/11.0/8.0 (UUZM 316) — *Glycera heteropoda*: Chile, Penco, surf beach, sand, 2.I.1958; holotype: af/281/138/12.0/7.5 (HZM P-15330)

Additional material: NW Atlantic: U.S.A., Massachusetts, Buzzards Bay, Wild Harbour St. 4/5, 29.V.1975; af/31/96/4.2/2.7; af/8/45/2.5/1.7 (SMF 9563) - Buzzards Bay, Crow Point St. 5/4, 4.VII.1975; cs/41/155/2.2/1.3 (SMF 9564) - Crow Point St. 5/6, 4.VII.1975; cs/62/184/3.4/2.2; af/15/56/2.4/1.6 (SMF 9565) - Crow Point St. 5/8, 4.VII.1975; cs/50/151/3.0/2.0; cs/30/124/1.8/1.1; af/25/84/3.6/2.4 (SMF 9566) - Crow Point St. 5/10, 4.VII.1975; cs/31/134/2.2/1.6; cs/23/126/2.2/1.4; af/12/59/2.6/1.8 (SMF 9567) - Buzzards Bay, Great Sippewisset St. 10/8, 5.VII.1975; af/11/43/2.9/1.7 (SMF 9568) - Great Sippewisset St. 10/9, 5.VII.1975; cs/48/138/2.6/1.7; af/38/96/3.7/2.6; af/25/79/2.8/1.8; af/24/98/2.0/1.3; af/22/87/2.9/1.8; af/19/70/2.6/1.8; af/16/67/2.8/1.7; af/11/60/2.9/2.0 (SMF 9569) - Great Sippewisset St. 10/10, 5.VII.1975; cs/44/144/3.4/2.3; af/47/129/4.0/2.8; af/36/115/2.3/1.5; af/20/56/2.7/1.8; af/16/70/2.4/1.8; af/13/56/2.4/1.8; af/11/51/2.0/1.2; af/7/34/2.4/1.4 (SMF 9570) - Buzzards Bay, Salt Pond Beach St. 14/4, 12.VI.1975; af/85/103/8.5/6.0 (SMF 9571) - Salt Pond Beach St. 14/6, 12.VI.1975; af/28/90/2.4/1.7 (SMF 9572) - Buzzards Bay, Silver Beach St. 6/4, 9.VII.1975; cs/41/168/2.6/1.7; cs/32/145/2.3/1.3; af/38/104/2.8/1.8 (SMF 9573) - Silver Beach St. 6/6, 9.VII.1975; cs/33/138/2.0/1.2; cs/30/129/2.4/1.5; cs/28/118/3.3/2.2; cs/22/130/2.1/1.3; af/20/82/1.8/1.0; af/11/103/1.8/1.1 (SMF 9574) - Silver Beach St. 6/8, 9.VII.1975; cs/30/143/2.3/1.4; cs/30/134/2.3/1.4; af/25/110/2.2/1.5; af/23/100/2.0/1.1 (SMF 9575) - Silver Beach St. 6/10, 9.VII.1975; cs/40/120/2.8/1.8; cs/34/131/1.8/1.0; af/99/180/5.0/3.4; af/70/162/3.0/2.1; af/13/62/2.0/1.3 (SMF 9576) - Silver Beach St. 7/6, 10.VI.1975; cs/49/151/3.2/2.0 (SMF 9577) - Buzzards Bay, Racing Beach St. 13/1, 4.VI.1975; cs/46/157/3.1/2.0; cs/35/159/2.2/1.3; cs/34/100/2.0/1.2; cs/29/135/2.0/1.3 (SMF 9578) - Racing Beach St. 13/2, VI.1975; cs/27/120/2.2/1.3 (SMF 9579) - Racing Beach St. 13/6, VI.1975; cs/60/186/4.5/3.2 (SMF 9580) - Buzzards Bay, API St. 1/4, 1975; cs/77/188/5.3/4.0 (SMF 9581) - API St. 3/2, 2.VI.1975; cs/19/77/2.5/1.5; af/27/95/3.1/2.1 (SMF 9582) - API St. 5/13, 1975; cs/111/188/5.2/3.2 (SMF 9583) - API St. 6/10, 1975; cs/165/227/5.3/4.0 (SMF 9584) - API St. 8-5, 1975; af/28/78/2.8/2.0 (SMF 9585) - API St. 8-9, 1975; cs/49/165/3.2/2.1 (SMF 9586) - API St. 14/2, 1975; cs/68/183/5.2/3.7 (SMF 9587) - Naushon Island; cs/89/228/6.2/4.3 (USNM 4974) - R/V FISH HAWK St. 835, Rhode Island, Sakonnet River, McCurrys Point, 27.VIII.1880, 3.5 fms, soft mud with broken shells; af/94/168/7.0/5.2 (USNM 6875) - R/V FISH HAWK St. 1533, Connecticut, Long Island Sound, Stratford Point lighthouse, 18.IX.1890, 14 fms, soft bottom; cs/138/155/9.2/6.3 (USNM 16051) - R/V FISH HAWK St. 1432, Long Island Sound, off Bridgeport, 41°06'17"N 73°10'11"W, 7.IX.1889, 7.5 fms, soft bottom; af/133/207/8.3/6.0 (USNM 29219) - New Jersey, Marshelder Channel, 3.X.1973; af/53/150/5.1/3.6 (USNM 71603) - Delaware, Sussex County, E of Millsboro, Indian River Ware Cove, 2.IV.1969; cs/73/145/3.1/1.8; af/71/136/4.6/2.8 (USNM 49198) - Maryland, Isle of Wight Bay,

21.VII.1953; cs/91/220/6.1/4.2 (USNM 29223) - Public Landing, summer 1952; af/70/171/5.1/3.8 (USNM 29232) - Virginia, Chincoteague Bay, near Robin's Marsh, 31.V.1953; cs/55/187/4.4/2.6 (USNM 29234) - North Carolina, Beaufort Harbour, Gallant Point Beach, 14.IX.1928; cs/103/213/6.0/4.3; cs/82/188/6.2/4.7; cs/69/207/4.8/3.5 (USNM 29230) - R/V FISH HAWK, South Carolina, Calibogue Sound, 1891; cs/124/213/6.2/4.4; cs/108/217/5.0/3.3 (USNM 16056) - Georgia, Ogeechee estuary St. 32, 17.III.1971; af/15/61/3.3/2.2 (SMF 9588) - Ogeechee estuary St. 39, 22.IV.1971; af/15/85/2.3/1.5; af/12/57/1.9/1.2 (SMF 9589) - Ogeechee estuary St. 44, 22.IV.1971; af/21/118/3.0/2.2; af/14/69/3.1/2.1; af/6/35/2.0/1.3 (SMF 9590) - Ogeechee estuary St. 50, 22.IV.1971; af/28/98/2.9/1.8 (SMF 9591) - Sapelo Island St. S 35, 23.VI.1969; cs/55/181/4.3/3.3; cs/50/183/4.0/2.8; af/59/129/4.3/3.0; af/34/97/3.8/2.5 (SMF 9592) — Gulf of Mexico: Florida, off Tampa, Seahorse Key, 6.II.1960; cs/72/229/4.2/2.7; cs/56/198/5.1/4.2; af/53/153/4.3/3.0; af/39/134/4.0/2.6; af/26/100/3.0/2.0 (USNM 30027) - Tampa Bay, 1963; cs/51/178/4.2/2.8; cs/47/172/3.0/2.0; cs/35/149/2.7/1.8; af/27/86/2.9/1.8; af/22/82/4.1/2.5 (USNM 45584) - Texas, Padre Island, Mustang Island, 5.VII.1962; cs/51/165/2.2/1.3; cs/39/166/2.8/1.8; cs/37/163/3.0/2.1; af/43/128/3.1/2.0; af/25/104/2.9/1.8; af/24/97/2.1/1.4; af/21/114/2.4/1.5 (USNM 52627) - off Port Isabel, STOCS St. 5/IV-4, 26°10'N 96°54'W, spring 1976, 37 m, silty-clayey sand; af/18/75/2.5/1.7 (USNM 89791) — SW Atlantic: Brazil, St. 6140 C, 24°06.00'S 46°10.00'W, 21.VIII.1982, 33 m, muddy sand; cs/25/111/2.2/1.4 (SMF 9593) - Paranaguá Bay, Buoy 22, St. 5, 25°29.59'S 48°25.02'W, 28.V.1982, 15.5 m, muddy sand; cs/44/202/2.7/1.8 (SMF 9594) - Paranaguá Bay, Papagaios tidal creek, 25°33'S 48°25'W, 16.II.1997, 0.5-2.5 m; af/54/109/3.3/2.1 (SMF 9595) - R/V CALYPSO St. 154, 32°15.3'S 51°58'W, 20.XII.1961, 18 m, mud; cs/128/197/6.2/4.2 (MNHN A886) - Argentina, Chubut, Península Valdés, Fracasso Beach, II.-V.1980, low tide, muddy sand; af/15/68/1.3/1.0 (USNM) - Península Valdés, Flechero Beach, I.-VI.1980, low tide, muddy sand; cs/35/152/2.2/1.5; cs/35/139/1.8/1.3; af/41/142/3.0/1.8; af/31/102/2.0/1.3 (USNM) — E Pacific: Panama, Venado Beach, St. 80-1, 19.III.1972, about 2 ft., muddy sand; cs/30/187/4.0/2.8; cs/22/148/2.7/1.9 (USNM Acc. No. 292580 partim) - off Peru St. 76, 6°56'S 80°23'W, 20.IV.1959; cs/19/103/2.3/1.4 (USNM 35953) — SE Pacific: Chile, 36°32.00'S 73°01.30'W, 24.XI.1984, 40 m; cs/147/217/9.3/6.3; cs/53/146/3.0/2.2; af/29/60/2.8/1.9 (UCC FN-8401-M:2) - 36°32.13'S 73°03.42'W, 24.XI.1984, 70 m; af/25/71/2.6/2.0; af/16/56/3.0/1.7 (UCC FN-8402-M:2) - 36°32.13'S 73°03.42'W, 10.VII.1985, 70 m; cs/95/197/7.2/5.3; af/12/46/3.1/2.2 (UCC FN-8415-M:2) - 36°33.00'S 73°08.12'W, 24.XI.1984, 90 m; cs/25/112/2.5/1.8 (UCC FN-8403-M:2) - 36°33.00'S 73°08.12'W, 12.XII.1985, 90 m; cs/106/203/8.3/6.2 (UCC FN-8422-M:2) - 36°33.45'S 73°13.06'W, 3.IV.1985, 110 m; cs/70/175/6.0/4.3 (UCC FN-8409-M:3) - Talcahuano, 8 fd; af/32/79/5.4/3.1 (HZM V-3846 partim) - Talcahuano, III.1892, 5 fd; af/102/179/8.0/5.5 (HZM V-5812) - Calbuco, XII.1894, beach, sand; af/375/178/14.0/9.0 (ZMB 3656) - Strait of Magellan, Smyth Channel; cs/55/160/4.7/2.6 (HZM V-1223)

Diagnosis: Proboscidial papillae mainly conical with 2 ridges; ailerons with triangular bases; parapodia of mid-body with two slender triangular postchaetal lobes of about same length; bush-like branchiae, situated dorsally on posterior side of parapodial bases.

Description: Body up to 445 mm long with up to 266 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-12 rings (fig. 88a). Proboscis with two types of papillae: 1. numerous conical papillae with 2 U-shaped ridges; 2. isolated, broader, oval to globular papillae without ridges (figs. 88b, 89). Aileron with triangular base (fig. 88c). First two parapodia uniramous; following parapodia biramous (fig. 88d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia both lobes elongated and slender triangular, of about same length; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, slightly shorter than postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae retractile, bush-like when completely developed and everted; starting from about 7th to 22nd parapodium to near posterior end; situated dorsally on posterior side of parapodial bases; best developed in mid-body region, about as long as prechaetal lobes.

Remarks: PETTIBONE (1963) described a 350 mm long specimen with 300 segments (see "Appendix", p. 209).

Distribution: Atlantic coasts of North and South America, Pacific coasts of South America; intertidal to 120 m (fig. 90)

Discussion: The description and drawings of *Glycera americana* LEIDY 1855 are rather vague, but the specimens probably have ramified branchiae on the posterior side of the parapodial bases (pl. XI, fig. 50).

Originally there were two syntypes of *Glycera cirrata* GRUBE 1857, but only the now lost specimen from Rio de Janeiro corresponded with the description (AUGENER 1925b) and was later referred to *Glycera americana* (AUGENER 1934). The other syntype from St. Croix is quite different and should be referred to *Glycera brevicirris*.

The type specimens of *Glycera laevis* KINBERG 1865, *Glycera jucunda* KINBERG 1865, *Glycera edentata* HANSEN 1882, *Glycera incerta* HANSEN 1882, *Glycera chilensis* ARWIDSSON 1899, *Glycera longissima* ARWIDSSON 1899 and *Glycera heteropoda* HARTMANN-SCHRÖDER 1962 have been examined and are believed to be identical to *Glycera americana*.

Glycera lamelliformis MCINTOSH 1885
Figs. 91-93

1885 *Glycera lamelliformis* MCINTOSH: 347; pl. 42, figs. 9-10; pl. 22A, fig. 11 [Locus typicus: Station 167A, Queen Charlotte Sound, Cook Strait, New Zealand; lectotype (hic): BMNH 1885.12.1.242] partim

1960b *Glycera lamellipodia* KNOX: 225, figs. 8-15 [Locus typicus: Lyttelton Harbour, New Zealand; type: ? NZOI]

Material examined:
Type material: *Glycera lamelliformis*: HMS CHALLENGER St. 167A, New Zealand, Cook Strait, Queen Charlotte Sound, 41°4'S 174°19'E, 27.VI.1874, 10 fms, mud; lectotype: af(af+2mf)/69(10+1+58)/153(35+4+114)/7.6/5.5 (BMNH 1885.12.1.242)

Additional material: SW Pacific: New Zealand, Tauranga; af/90/107/5.9/4.2 (ZMB 6666 partim) - 41°15.5'S 174°53'E, 20.xi.1964, 18 m; af/66/222/6.8/4.6 (NZOI D362) - Wellington Harbour, Kaiwharawhara, c. 41°16'S 174°47'E, iii.1993; cs/31/107/1.6/1.1 (NZOI Z8232) - Kaiwharawhara, iii.1993; af/25/78/4.0/2.2 (NZOI Z8234) - Kaiwharawhara, iii.1993; cs/128/235/5.5/3.8; cs/40/165/3.0/2.1 (NZOI Z8237) - Kaiwharawhara, iii.1993; af/52/151/3.0/2.2 (NZOI Z8238) - Kaiwharawhara, iii.1993; cs/112/272/5.2/4.1; cs/31/127/2.8/2.0 (NZOI Z8240) - Kaiwharawhara, iii.1993; cs/39/125/2.8/2.0; af/50/111/4.2/2.7; af/41/114/3.7/2.4 (NZOI Z8241) - Kaiwharawhara, iii.1993; cs/118/283/5.2/3.3 (NZOI Z8245) - Kaiwharawhara, iii.1993; af/49/138/5.0/3.7 (NZOI Z8246) - Kaiwharawhara, iii.1993; af/69/126/5.5/4.0 (NZOI Z8249) - Kaiwharawhara, iii.1993; af/70/120/5.6/4.3; af/30/96/3.2/2.3 (NZOI Z8250) - Kaiwharawhara, iii.1993; af/39/116/4.8/2.9 (NZOI Z8273) - 41°16.5'S 173°59.9'E, 10.xii.1983, c. 10 m; af/35/100/5.0/3.5; af/28/109/3.0/2.0 (NZOI T505) - 41°16.5'S 174°54'E, 20.xi.1964, 17 m; af/64/171/5.5/3.8 (NZOI D372) - 41°19'S 174°51'E, 19.xi.1964, 12 m; af/45/114/5.0/3.0 (NZOI D310) - 42°23.75'-23.88'S 173°51.32'-51.80'E, 13.xii.1982, 60-100 m; af/93/186/8.0/6.2 (NZOI U254 partim) - 42°26.9'S 173°41.4'E, 8.xii.1982, 58-54 m; cs/105/215/6.9/4.8 (NZOI U235) - 43°20'S 173°20.8'E, 5.x.1962, 77 m, medium black sand; af/73/152/8.0/5.8 (NZOI B547) - 46°58.9'S 168°06'E, 25.v.1960, 19 m; cs/154/242/6.5/5.0 (NZOI B244) - 48°32'S 174°50'E, 3.ii.1965, 814 m; cs/135/248/7.8/5.5 (NZOI F151) — Tasman Sea: New Zealand, 37°07.22'S 174°40.23'E, 13.v.1980, intertidal; cs/107/230/4.1/2.7; af/50/154/3.9/2.4; af/23/76/1.8/1.3 (NZOI O531) - 37°07.25'S 174°40.08'E, 13.v.1980, intertidal; cs/44/168/2.7/1.8 (NZOI O533) - 37°07.25'S 174°40.12'E, 13.v.1980, intertidal; af/29/164/2.0/1.4 (NZOI O526) - 37°07.25'S 174°40.12'E, 13.v.1980, intertidal; af/30/100/3.2/2.0; af/15/71/2.6/1.7 (NZOI O525 partim) - 37°07.25'S 174°40.12'E, 13.v.1980, intertidal; af/32/125/2.6/1.9; af/23/112/2.2/1.6; af/22/107/2.3/1.7 (NZOI O527) - 37°07.25'S 174°40.12'E, 13.v.1980, intertidal; cs/29/130/2.7/1.9; cs/26/175/2.0/1.4; af/11/85/1.8/1.0 (NZOI O528) - 37°07.25'S 174°40.12'E, 13.v.1980, intertidal; af/23/107/2.1/1.4 (SMF 9596) - 37°07.25'S 174°40.12'E, 13.v.1980, intertidal; af/20/85/2.0/1.4; af/17/72/2.3/1.8 (NZOI O529) - 37°07.63'S 174°41.67'E, 22.xi.1976, intertidal; cs/47/159/2.6/2.0 (NZOI O119) - 39°50'S 173°01'E, 6.ix.1959, 95 m; af/108/172/9.4/7.0; af/99/250/5.3/3.9; af/61/167/4.9/3.7 (NZOI C184 partim) - 39°50'S 173°42.5'E, 5.ix.1959, 68 m; af/33/89/5.8/4.5 (NZOI C183 partim) - 40°30'S 173°23'E, 21.iii.1965, 62 m; cs/83/245/6.0/4.6 (NZOI F188) - 40°40'S 173°23'E, 19.iii.1965, 59 m; af/123/242/11.0/9.0 (NZOI F173) - 40°50'S 173°03'E, 7.ix.1959, 23 m; af/32/97/5.0/3.8 (NZOI C187) - 40°50'S 173°16.3'E, 7.ix.1959, 43 m; cs/68/182/5.0/3.8 (NZOI C188) - 40°56.6'S 173°59.1'E, 14.xii.1983, 29 m; cs/89/237/6.3/4.7 (NZOI T543) - 40°57.7'S 174°03.65'E, 14.xii.1983, 33 m; af/45/104/7.0/4.8 (NZOI T545) - 40°58.8'S 173°54.75'E, 14.xii.1983, 23 m; af/93/242/6.1/4.3 (NZOI T546) - 40°59.1'S 174°11.7'E, 12.xii.1983, 18 m; cs/200/282/11.3/9.0 (NZOI T524) - 40°59.1'S 174°16.5'E, 12.xii.1983, 53 m; cs/185/299/10.8/8.0 (NZOI T517) - 40°59.25'S 174°08.6'E, 13.xii.1983, 19 m; af/107/173/8.2/5.0 (NZOI T528) - 41°00'S 173°49.3'E, 30.x.1962, 29.5 m, soft gray mud; cs/90/242/5.0/3.7 (NZOI B693) - 41°00'S 174°39'E, 11.ix.1959, 198 m; af/40/98/4.6/3.0 (NZOI C197) - 41°00.95'S 174°12.55'E, 12.xii.1983, 37 m; af/34/99/3.0/1.8 (NZOI T519) - 41°02.1'S 173°50.0'E, 14.xii.1983, 30 m; af/44/122/4.6/2.8 (NZOI T550) - 41°02.2'S 174°05.25'E, 13.xii.1983, 27 m; af/33/102/5.6/4.0 (NZOI T535) - 41°02.5'S 174°13.3'E, 12.xii.1983, 32 m; af/45/121/6.2/4.2 (NZOI T520) - 41°03.2'S 174°21.5'E, 7.xii.1983, 78-93 m; af/119/193/6.7/4.5 (NZOI T478 partim) - 41°04.0'S 174°13.25'E, 12.xii.1983, 26 m; af/53/159/4.8/3.4; af/37/127/4.1/2.1 (NZOI T521) - 41°04.9'S 174°20.0'E, 7.xii.1983, 20-21 m; af/49/140/3.4/2.4 (NZOI T480) - 41°04.9'S 174°20.0'E, 7.xii.1983, 21 m; af/99/216/7.2/5.1 (NZOI T481) - 41°05.3'S 174°15.5'E, 7.xii.1983, 15 m; af/125/166/10.0/7.8 (NZOI T472) - 41°05.95'S 174°22.2'E, 8.xii.1983, 21 m; af/95/115/10.2/7.2 (NZOI T486) - 41°06.1'S 174°10.8'E, 11.xii.1983, 34 m; cs/173/274/9.0/6.2; af/138/218/7.2/5.0 (NZOI T509) - 41°06.4'S 173°46.8'E, 30.x.1962, 20 m; cs/97/225/7.8/5.4; af/22/88/2.3/1.8 (NZOI B695) - 41°06.6'S 174°18.8'E, 8.xii.1983, 28 m; af/161/183/10.0/7.4 (NZOI T482) - 41°06.8'S 174°21.2'E, 8.xii.1983, 21 m; cs/138/281/7.6/4.7 (NZOI T487) - 41°07.5'S 174°13.3'E, 9.xii.1983, 45 m; af/132/235/7.9/5.7; af/61/161/5.3/4.2 (NZOI T495) - 41°07.6'S 173°58.3'E, 30.iii.1964, 31 m; af/70/112/8.3/4.2 (NZOI E85) - 41°07.8'S 174°17.5'E, 8.xii.1983, 37 m; cs/124/271/6.4/4.7 (NZOI T488) - 41°07.9'S 174°15.3'E, 9.xii.1983, 45 m; cs/120/261/5.3/4.2; af/94/191/6.7/4.8 (NZOI T496) - 41°08.3'S 174°14'E, 12.ix.1959, 46 m; cs/145/286/8.8/6.5; af/66/170/5.0/3.7 (NZOI C218) - 41°08.6'S 174°16.6'E, 8.xii.1983, 44 m; cs/145/244/8.2/6.0 (NZOI T489) - 41°09.4'S 174°11.3'E, 11.xii.1983, 51 m; cs/125/254/6.7/4.4; cs/92/224/6.0/4.7; cs/91/227/5.8/4.0; cs/73/206/5.3/3.9 (NZOI T511) - 41°09.4'S 174°13.25'E, 11.xii.1983, 59 m; cs/163/296/9.5/7.3 (NZOI T512) - 41°09.5'S 174°18.0'E, 8.xii.1983, 45 m; af/60/152/5.0/3.2 (NZOI T490) - 41°09.5'S 174°19.6'E, 8.ii.1983, 49 m; cs/202/273/12.0/9.2; af/120/184/10.2/8.0; af/57/133/8.0/5.0; af/51/147/5.3/3.4 (NZOI T491) - 41°10.25'S 174°16.65'E, 11.xii.1983, 37 m; af/144/206/10.1/7.9; af/27/87/5.6/3.5 (NZOI T513) - 41°10.5'S 173°09.8'E, 5.iv.1971, 14 m; af/35/104/5.6/4.0 (NZOI K152) - 41°11.3'S 174°12.5'E, 11.xii.1983, 61 m; cs/226/280/10.3/7.3; cs/107/268/5.6/4.0 (NZOI T508) - 41°11.3'S 174°12.5'E, 11.xii.1983, 61 m; cs/196/288/11.0/8.0 (SMF 9597) - 41°11.5-11.1'S 174°09.7-09.5'E, 10.xii.1983, 30 m; af/71/179/5.0/2.8; af/60/194/4.2/2.5 (NZOI T497) - 41°11.6'S 174°14.1'E, 11.xii.1983, 45 m; af/107/228/8.0/6.1 (NZOI T507) - 41°11.9'S 174°07.5'E, 10.xii.1983, 21 m; af/93/167/8.6/6.0; af/40/139/5.4/4.2 (NZOI T498) - 41°13.0'S 173°52.2'E, 13.xi.1978, 28 m; af/186/260/9.8/7.4 (NZOI Q116) - 41°14'S 174°51.5'E, 19.xi.1964, 11 m; af/27/84/4.0/2.7 (NZOI D321) - 41°14'S 174°52'E, 20.xi.1964, 13 m; cs/67/252/6.8/4.3 (NZOI D350) - 41°14'S 174°52.5'E, 20.xi.1964, 17 m; cs/47/228/3.2/2.3 (NZOI D351) - 41°14.5'S 174°07.7'E, 10.xii.1983, 16 m; af/28/97/2.8/1.8 (NZOI T499) - 45°01.90'S 167°17.76'E, 29.i.1971, 146 m; cs/103/249/5.2/3.9 (NZOI H223)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with short stalk and without ridges on nail; ailerons with triangular bases; parapodia of mid-body with two slender triangular postchaetal lobes of about same length; blister-like branchiae, situated dorsally on parapodial bases.

Description: Body up to 226 mm long with up to 299 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one. Conical prostomium consisting of about 9-12 rings (fig. 91a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with short stalk and without ridges on nail; 2. less numerous conical papillae with straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 91b, 92). Aileron with triangular base (fig. 91c). First two parapodia uniramous; following parapodia biramous (fig. 91d-l). Two slender triangular to digitiform prechaetal lobes of about same length; notopodial lobe usually slightly wider than neuropodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded, neuropodial lobe slightly longer than notopodial lobe; in following parapodia first neuropodial lobe elongated and slender triangular, then also notopodial lobe shaped in the same way; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, slightly shorter than post-

chaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, blister-like; starting from about 30th to 50th parapodium to near posterior end; situated dorsally on parapodial bases.

Remarks: KNOX (1960b) described a 990 mm long specimen, as *Glycera lamellipodia*, with 528 segments (see "Appendix", p. 222). This individual was obtained by trawling and is believed to be the largest reported glycerid to date.

Distribution: Sea around New Zealand; intertidal to 814 m (fig. 93)

Discussion: The original description and drawings are based on the herewith fixed lectotype of *Glycera lamelliformis* MCINTOSH 1885, whereas the smaller paralectotype is referred to *Glycera russa*.

The type material of *Glycera lamellipodia* KNOX 1960 cannot be located, but it might now be in the NZOI together with the rest of the KNOX collection. The description and drawings show clearly that this taxon belongs to *Glycera lamelliformis*.

Glycera onomichiensis IZUKA 1912
Figs. 94-96

1878 *Glycera subaenea* GRUBE: 184; pl. 8, fig. 8 [Locus typicus: Canal von Lapinig, Philippinen; paralectotypes (hic): MPUW 290] partim

1912 *Glycera onomichiensis* IZUKA: 244; pl. 24, figs. 10-12 [Locus typicus: Onomichi in Prov. Bingo, Misaki, Gulf of Kagoshima in Prov. Satsuma (Japan); syntypes: UMUT]

1912 *Glycera hasidatensis* IZUKA: 246; pl. 24, figs. 14-15 [Locus typicus: West side of Hashidaté in the Gulf of Miyazu, Prov. Tango (Japan); paralectotype (hic): UMUT] partim

Material examined:
Type material: *Glycera subaenea*: Philippine Islands, Bohol, Canal of Lapinig, VIII.1863, 8 fms, coral ground; 2 paralectotypes: cs(af+pf)/87(72+15)/145(108+137)/4.0/2.6; af/55/98/4.5/2.8 (MPUW 290) — *Glycera onomichiensis*: Japan, Prov. Bingo, Onomichi, intertidal, sand; 4 syntypes: cs/111/188/6.1/4.2; cs/54/185/4.1/2.6; cs/44/176/4.1/2.7; cs/32/131/5.5/4.0 (UMUT) - Japan, Prov. Satsuma, Kagoshima Bay, off Kiire, 15-33 m; 2 dried syntypes (UMUT) — *Glycera hasidatensis*: Japan, Prov. Tango, Gulf of Miyazu, West side of Hashidaté, 8.VII.1903; paralectotype: af/57/126/3.9/2.6 (UMUT partim)

Additional material: Bay of Bengal: Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — NW Pacific: Japan, Tohoku Region, Sendai, Ohtsuchi Bay, 14.X.1996, 70-100 m, sand and rubble; af/30/114/4.0/2.5; af/35/87/3.8/2.3 (CBM[5]) - Boso Peninsula, Katsuura, 18.III.1998, 10-15 m, sandy mud and rubble; cs/25/88/2.0/1.4 (CBM) - Katsuura, 31.III.1998, subtidal, among rubble; cs/122/166/7.9/5.0 (CBM) - Yakushima-Island, near Kagoshima, St. 9, V.1996, 80-100 m; af/33/94/3.9/2.2 (CBM[6]) — East China Sea: Korea Strait, 65 fms; af/56/94/6.0/4.8 (UUZM 1457) - Japan, Ariake Sea; cs/95/178/5.6/4.2; af/102/127/6.8/4.4; af/78/116/6.2/4.2 (NSM) — South China Sea: China, Hainan, St. 6143, 8.IV.1960, 100 m; af/21/67/3.7/1.9 (SMF 9598) - Hainan, St. 6161, 27.I.1959, 125 m; af/75/161/6.5/4.5 (SMF 9599) — SW Pacific: New Zealand, Auckland, estuaries, mudflat; cs/70/238/4.2/2.8 (USNM 33120) — Tasman Sea: 28°54.9'S 167°44.8'E, 27.I.1977, 130-301 m; cs/48/181/4.8/2.9 (NZOI P26) - 29°31.8'S 167°59.2'E, 26.I.1977, 52 m; af/36/105/5.0/3.3 (NZOI P21) - R/V TANGAROA Cruise 81-T-1 St. 205, Australia, Victoria, central Bass Strait, 39°13.6'S 143°55.6'E, 23.XI.1981, 85 m, sandy shell; af/35/98/3.1/2.0; af/14/83/1.7/1.0 (MV F 80214 partim) - F/V SARDA Cruise 80-Sa-1 St. 112, southwestern Bass Strait, 40°22.2'S 145°17'E, 3.XI.1980, 40 m, sand; af/18/46/3.1/2.0; af/7.5/38/1.3/0.7 (MV F 80212 partim)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with long stalk and some longitudinal ridges on nail; ailerons with pointed triangular bases; parapodia of mid-body with two slender triangular postchaetal lobes of about same length; branchiae absent.

Description: Body up to 122 mm long with up to 238 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one. Conical prostomium consisting of about 10-13 rings (fig. 94a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with long stalk and some longitudinal ridges on nail; 2. less numerous digitiform papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 94b, 95). Aileron with pointed triangular base (fig. 94c). First two parapodia uniramous; following parapodia biramous (fig. 94d-l). Two slender triangular to digitiform prechaetal lobes of about same length; notopodial lobe usually slightly wider than neuropodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded, neuropodial lobe slightly longer than notopodial lobe; in following parapodia both lobes elongated and slender triangular, of about same length; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, slightly shorter than postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae absent.

Remarks: USCHAKOV & WU (1965) described a 220 mm long specimen as *Glycera robusta*; this animal might belong to *Glycera onomichiensis* (see "Appendix", p. 226).

Distribution: West Pacific, Bay of Bengal; intertidal to 301 m (fig. 96)

Discussion: Two of the type specimens of *Glycera subaenea* GRUBE 1878 are not in accordance with the original description. The herewith fixed paralectotypes are identical to *Glycera onomichiensis* as is also the case with one of the herewith fixed paralectotypes of *Glycera hasidatensis* IZUKA 1912.

The description and drawings of *Glycera onomichiensis* IZUKA 1912 mainly correspond with the syntypes.

Glycera cinnamomea GRUBE 1874
Figs. 97-99

1874 *Glycera cinnamomea* GRUBE: 327 [Locus typicus: Ceylon; holotype: BMNH 1874.10.2.9]
1885 *Glycera rutilans* GRUBE in MCINTOSH: 345 ["Locus typicus" : Ceylon; "holotype": BMNH 1874.10.2.9] nomen nudum
1932 *Glycera parashadi* FAUVEL: 126 [Lapsus calami for *Glycera prashadi*]
1932 *Glycera prashadi* FAUVEL: 126; pl. 5, figs. 1-8 [Locus typicus: "Investigator" Sta. 292, Persian Gulf; Sta. 549, Mergui, Bay of Bengal (Burma); Sta. 631, Nankuari (Nicobaren); syntype: BMNH 1938.5.7.45, UCO R/5 slide with parapodia]
1932 *Glycera cirrata* – FAUVEL: 129, textfig. 18a-e (non GRUBE 1857)
1932 *Glycera manorae* FAUVEL: 130; pl. 5, figs. 9-17 [Locus typicus: Manora Shoal, Karachi (Pakistan); holotype: ? ZSI, UCO R/13, R/13' slides with fragments]
1933a *Glycera convoluta* var. *capensis* MONRO: 499, fig. 12 [Locus typicus: Seaforth, South Africa; holotype: BMNH 1932.11.24.39]

Material examined:
Type material: *Glycera cinnamomea/rutilans*: Sri Lanka; holotype: cs/95/178/4.3/2.8 (BMNH 1874.10.2.9) — *Glycera prashadi*: HMS INVESTIGATOR St. 549, off Burma, Mergui Harbour, 12°48'N 98°23'30"E, 24 fms; syntype: af/70/116/4.8/3.0 (BMNH 1938.5.7.45) - slide (with parapodia) (UCO R/5) — *Glycera manorae*: Pakistan, Karachi, Manora Shoal; 2 slides (with parapodia, aileron, papillae) from holotype (UCO R/13, R/13') — *Glycera convoluta* var. *capensis*: South Africa, Seaforth, 29.VIII.1931; holotype: cs/83/149/7.2/4.8 (BMNH 1932.11.24.39)

Additional material: SE Atlantic: South Africa, False Bay St. FB.317, 34°09.50'S 18°28.25'E, 29.IV.1948, 26.5 m, sand; cs/91/152/6.0/4.3 (SAM A20472) - R/V GAUSS, Simonstown, 35°15'S 19°45'E, VII.1903; cs/55/142/7.4/4.7 (ZMB 5849) — Red Sea: Suez, 7.I.1918, 5 fms; af/59/109/4.0/2.2 (ZSI W 2435/1) - Suez (? Snej, 1918); slide (UCO R/10') — Arabian Sea: HMS INVESTIGATOR St. 349, Persian Gulf, 28°59'N 50°03'E, 25 fms; af/84/154/5.4/4.0 (BMNH 1938.5.7.46) - HMS INVESTIGATOR St. 349, Persian Gulf, 28°59'N 50°03'E, 25 fms; af/75/183/4.2/3.0 (MNHN A419) - HMS INVESTIGATOR St. 349, Persian Gulf, 28°59'N 50°03'E, 25 fms; slide (with parapodia, aileron, papillae) (UCO R/12) — Bay of Bengal: Madras Coast, Seven-Pagodas, 5-10 fms; slide (UCO R/11) - HMS INVESTIGATOR St. 54, India, 12°21'30"N 92°03'30"E, 13.IV.1889, 780 fms, Globigerina ooze; slide (UCO R/12') - Andamans, Calcutta; slide (UCO R/11') - E India; cs/99/247/5.6/3.0; cs/93/238/5.3/2.8; cs/58/184/4.5/2.2; af/72/184/5.8/3.0; af/67/165/4.9/2.6 (ZMB 481) - HMS INVESTIGATOR St. 395, Burma, off Tenasserim, 50 fms; slide (UCO R/10) - Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — E Indian Ocean: Australia, Western Australia, North West Island, VII.1910, among coral; af/67/99/5.0/3.0 (AM W226) — W Pacific: Indonesia, Aru Islands, Sungi Manumbai, Kapala Sungi, 28.III.1908, 23 m, sand with shells; cs/112/165/5.2/2.9 (SMF 1987) — South China Sea: Indochina, Récif de Caûda; slide (with parapodia, papillae) (UCO Q 58) - USS ALBATROSS St. 5113, Phillippines, Batangas, Luzon Island, Balayan Bay, Sombrero Island, 13°51'30"N 120°50'30"E, 17.I.1908, 159 fms, dark green mud; cs/140/274/5.7/4.3 (USNM 17585)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with long stalk and some longitudinal ridges on nail; ailerons with pointed triangular bases; parapodia of mid-body with two slender triangular postchaetal lobes of about same length; 1-5 digitiform branchial rami, situated dorsally on parapodial base.

Description: Body up to 140 mm long with up to 274 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 9-12 rings (fig. 97a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with long stalk and some longitudinal ridges on nail; 2. less numerous digitiform papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 97b, 98). Aileron with pointed triangular base (fig. 97c). First two parapodia uniramous; following parapodia biramous (fig. 97d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia both lobes elongated and slender triangular, of about same length; in posteriormost parapodia both lobes generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, slightly shorter than postchaetal lobes; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, 1-5 digitiform branchial rami; starting from about 20th to 34th parapodium to near posterior end; situated dorsally on parapodial bases; best developed in mid-body region, about as long as prechaetal lobes.

Distribution: Indian Ocean, Red Sea, Persian Gulf, East and South China Sea, Indo-Pacific; intertidal to 1427 m (fig. 99)

Discussion: The specimen under the catalogue number BMNH 1874.10.2.9 from the E.W.H. HOLDSWORTH collection is the holotype of *Glycera cinnamomea* GRUBE 1874. The label details the species *Glycera rutilans*, which appears to be a unpublished manuscript name of GRUBE. MCINTOSH (1885) reported this nomina nuda as a possible synonym for *Glycera amboinensis*.

The type material of *Glycera prashadi* FAUVEL 1932, *Glycera manorae* FAUVEL 1932 and *Glycera convoluta* var. *capensis* MONRO 1933 have been examined and are referred to *Glycera cinnamomea*.

HARTMAN (1959) considered *Glycera cirrata*, described by FAUVEL (1932) as *Glycera cirrata* GRUBE, to be a valid species, since she did not believe that FAUVEL's animals belonged to GRUBE's species. The description,

drawings and the material (MNHN A419, BMNH 1938.5.7.46, UCO slides, ZSI W 2435/1) show clearly that the specimens are identical to *Glycera cinnamomea*.

Glycera gilbertae BÖGGEMANN & FIEGE 2001
Figs. 100-102

1984a *Glycera* sp. E GILBERT: 20; figs. 17, 18a-g
2001 *Glycera gilbertae* BÖGGEMANN & FIEGE: 34, figs. 3, 8e-f, 10 [Locus typicus: off Port Isabel, Texas; holotype: USNM 89789]

Material examined:
Type material: *Glycera gilbertae*: Texas, off Port Isabel, STOCS St. 5/IV-3, 26°10'N 96°54'W, summer 1976, 37 m, silty-clayey sand; holotype: af/34/108/6.0/4.0 (USNM 89789) - off Port Isabel, STOCS St. 5/IV-4, 26°10'N 96°54'W, spring 1976, 37 m, silty-clayey sand; paratype: af/27/83/4.0/2.6 (SMF 9600) - off Port Isabel, STOCS St. 1/IV-2, 26°10'N 97°01'W, winter 1976, 27 m, clayey sand; paratype: af/35/126/2.8/1.6 (USNM 89786)

Additional material: Gulf of Mexico: U.S.A., off Mississippi, MAFLA St. 2638, 29°55'29"N 88°33'28"W, XI.1977, 24 m, sandy silt; af/26/63/2.8/1.6 (USNM 89783) - U.S.A., Texas, off Port O'Connor, STOCS St. 4/I-3, 28°14'N 96°29'W, V.1976, 10 m, clayey sand; af/17/74/3.0/1.7 (USNM 89784) - off Port O'Connor, STOCS St. 4/I-3, 28°14'N 96°29'W, fall 1976, 10 m, clayey sand; af/20/66/3.8/2.6 (USNM 89785) - Texas, off Port Isabel, STOCS St. 5/IV-1, 26°10'N 96°54'W, fall 1976, 37 m, silty-clayey sand; af/9/44/2.4/1.5 (USNM 89788) - off Port Isabel, STOCS St. 5/IV-6, 26°10'N 96°54'W, spring 1976, 37 m, silty-clayey sand; af/10/40/1.4/0.6 (USNM 89790) - R/V JUSTO SIERRA, Mexico, Dinamo I St. 25, 19°07.1'N 91°33.3'W, 12.III.1990, 17 m; af/24/76/5.2/3.2 (UNAM PO-41-008)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with short stalk and 4-6 V-shaped terminal ridges on nail; ailerons with triangular bases; parapodia of mid-body with slender triangular notopodial and shorter, rounded neuropodial postchaetal lobes; branchiae absent.

Description: Body up to 36 mm long with up to 126 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 9-10 rings (fig. 100a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with short stalk and 4-6 V-shaped terminal ridges on nail; 2. less numerous conical papillae with 4-6 U-shaped ridges; 3. isolated, distinctly broader, oval to globular papillae also with 4-6 U-shaped ridges (figs. 100b, 101). Aileron with triangular base (fig. 100c). First two parapodia uniramous; following parapodia biramous (fig. 100d-l). Two slender triangular to digitiform prechaetal lobes, neuropodial lobe always slightly longer than notopodial one; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe distinctly shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and slender triangular, longer than rounded neuropodial lobe; in posteriormost parapodia notopodial lobe generally shorter and rounded. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as notopodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated termino-ventrally on parapodia. Branchiae absent.

Distribution: Gulf of Mexico; 10-37 m (fig. 102)

Discussion: *Glycera gilbertae* can be clearly distinguished from all other species of *Glycera* by the shape of the proboscidial papillae.

Glycera posterobranchia HOAGLAND 1920
Figs. 103-105

1920 *Glycera posterobranchia* HOAGLAND: 620; pl. 51, figs. 3-8 [Locus typicus: Station D5375, Tayabas Light, Marinduque Island (Philippine Islands); holotype: USNM 18960]

Material examined:
Type material: *Glycera posterobranchia*: USS ALBATROSS St. D5375, Philippine Islands, Marinduque Island, Tayabas Light, 2.III.1909, 107 fms, green mud; holotype: af/76/94/6.5/4.3 (USNM 18960)

Additional material: Bay of Bengal: Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — South China Sea: China, Hainan, Lingchang, St. 5, 7.IV.1992; af/6/28/1.4/0.9 (SMF 9601) - Hainan, Qukou, 13.II.1992, mudflat; cs/30/119/2.3/1.5 (SMF 9602) - Hainan, Qinglan, 5.IV.1992; af/27/130/3.2/1.9 (SMF 9603) - Hainan, Bay of Sanya, 24.III.1992, 5 m; af/20/75/2.2/1.5 (SMF 9604) - Bay of Sanya, 22.III.1992; cs/12/72/2.1/1.4 (SMF 9605)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with medium-length stalk and some longitudinal ridges on nail; ailerons with pointed triangular bases; parapodia of mid-body with slender triangular notopodial and shorter, rounded neuropodial postchaetal lobes, in posterior parapodia neuropodial lobes as long as notopodial lobes and equally slender triangular; simple, digitiform branchiae, situated mediodorsally on parapodia.

Description: Body up to 76 mm long with up to 130 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 10-12 rings (fig. 103a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with medium-length stalk and some longitudinal ridges on nail; 2. less numerous, slightly shorter, conical papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 103b, 104). Aileron with pointed triangular base (fig. 103c). First two parapodia uniramous; following parapodia biramous (fig. 103d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe

elongated and slender triangular, distinctly longer than rounded neuropodial lobe; notopodial lobe in mid-body slender and elongated; in posterior parapodia neuropodial lobe as long as notopodial lobe and equally slender triangular; in last parapodia both lobes generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as notopodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated termino-ventrally on parapodia. Branchiae non-retractile, simple, digitiform; starting from about 23rd to 26th parapodium to near posterior end; situated medio-dorsally on parapodia; best developed in mid-body region, extending beyond prechaetal lobes.

Remarks: Ramifying branchiae are sometimes present (SMF 9602).

Distribution: South China Sea, Bay of Bengal; 5-196 m (fig. 105)

Discussion: The description and drawings of *Glycera posterobranchia* HOAGLAND 1920 predominantly agree with the holotype.

Glycera macrobranchia MOORE 1911
Figs. 106-108

1911 *Glycera alba macrobranchia* MOORE: 301 [Locus typicus: Beaver Shoal, San Diego Bay, California (U.S.A.); holotype: USNM 16848]

1919a *Glycera exigua* CHAMBERLIN: 13 [Locus typicus: Balboa (Laguna Beach, California, U.S.A.); holotype: MCZ 2158]

1992 *Glycera orientalis* BUZHINSKAJA: 6, figs. 1-16 [Locus typicus: R/V TOPOROK St. 94, off South Sakhalin, Sea of Japan; holotype: ZISP 1/47386]

Material examined:
Type material: *Glycera macrobranchia*: USS ALBATROSS, California, San Diego Bay, Beaver Shoal, 19.VII.1905, mud; holotype: af/97/129/4.4/3.0 (USNM 16848) — *Glycera exigua*: California, Balboa, Laguna Beach, 26.XII.1917; holotype: cs/28/135/2.2/1.5 (MCZ 2158 + 1 slide) — *Glycera orientalis*: R/V TOPOROK St. 8, Sea of Japan, South Sakhalin, 22.-23.VIII.1948, 22 m, shells; paratype: af/78/185/5.2/3.4 (ZISP 9/23754)

Additional material: Bay of Bengal: Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — NE Pacific: Canada, British Columbia, Clayoquot; cs/255/320/7.1/5.1 (USNM 35943) - U.S.A., California, Los Angeles County, San Pedro, 25.XII.1895; cs/43/176/3.2/1.8 (LACM N3160) - San Pedro; cs/106/210/3.7/2.5 (LACM N2901) - R/V VELERO III St. 1457-42, California, Orange County, Corona del Mar, 9.XI.1942, intertidal; cs/60/189/3.9/2.2; af/15/81/1.4/0.8 (LACM) - R/V VELERO III St. 1450-42, Corona del Mar, Newport Harbor, 33°36'04"N 117°52'48"W, 1.VI.1942, intertidal; cs/47/151/2.8/1.7; af/38/128/2.8/1.8 (LACM) - R/V VELERO III St. 1441-41, Newport Harbor, 33°35'43"N 117°52'38"W - 33°36'12"N 117°52'56"W, 17.XII.1941, intertidal, muddy sand flats; af/72/177/3.3/2.0; af/35/109/3.0/2.0 (LACM[7]) - California, San Diego County, Mission Bay, near bridge, 16.IV.1938; af/63/172/3.4/2.0 (LACM N2541) - R/V VELERO III St. 1505-43, Baja California del Norte, near Punta Descanso, 14.I.1943, intertidal, rocky reef; cs/77/197/3.9/2.5; cs/59/185/3.0/2.0 (LACM[8]) - R/V VELERO III St. 1505-43, near Punta Descanso, 14.I.1943, intertidal, rocky reef; cs/58/181/3.1/2.1 (SMF 8551) - Baja California del Norte, Ensenada, 19.XII.1930, from tide flats; cs/77/190/3.4/2.0 (LACM N2545) - Baja California del Norte, Bahia de Todos, 2.VII.1938; af/33/86/4.3/3.0; af/33/80/4.4/3.0 (LACM N2980) - Bahia de Todos, 2.VII.1938; af/28/79/4.3/3.0 (SMF 8552) - R/V VELERO III St. 617-37, 26°11'50"N 112°29'05"W, Baja California, Bahia de San Juanico, 2.III.1937, 24 fms, sand and kelp; cs/67/181/3.1/2.0 (LACM)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with short stalk and some longitudinal ridges on nail; ailerons with triangular bases; in anterior parapodia only one, medially inserted, slender triangular postchaetal lobe, parapodia of mid-body with slender triangular notopodial and shorter, rounded neuropodial postchaetal lobes; simple, digitiform branchiae, situated termino-dorsally on parapodia.

Description: Body up to 255 mm long with up to 320 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 13-15 rings (fig. 106a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with short stalk and some longitudinal ridges on nail; 2. less numerous conical papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 106b, 107). Aileron with triangular base (fig. 106c). First two parapodia uniramous; following parapodia biramous (fig. 106d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly only one, medially inserted, slender triangular lobe; in following parapodia slender triangular notopodial and shorter, rounded neuropodial lobe; notopodial lobe in posterior parapodia slender and elongated; in last parapodia notopodial lobe generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, usually slightly shorter than notopodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, simple, digitiform; starting from about 16th to 30th parapodium to near posterior end; situated termino-dorsally on parapodia; best developed in mid-body region, extending far beyond prechaetal lobes.

Remarks: Ramifying branchiae and distorted parapodia are sometimes present (BUZHINSKAJA 1992, figs. 14-16).

Distribution: Northwestern and northeastern Pacific coasts, Bay of Bengal; intertidal to 73 m (fig. 108)

Discussion: The description of *Glycera alba macrobranchia* MOORE 1911 agrees with the holotype. The

great differences between these taxon and *Glycera alba* supported an elevation of *Glycera alba macrobranchia* to species status.

The type specimens of *Glycera exigua* CHAMBERLIN 1919 and *Glycera orientalis* BUZHINSKAJA 1992 have been examined and are believed to be identical to *Glycera macrobranchia*.

Glycera alba (O.F. MÜLLER 1776)
Figs. 109-111

1776 *Nereis alba* O.F. MÜLLER: 217 [Locus typicus: no locality details, O.F. MÜLLER (1784): Norvegiae; type: lost]
1784 *Nereis alba* – O.F. MÜLLER: 64 [Norvegiae]
1788 *Nereis alba* – O.F. MÜLLER: 29; pl. 62, figs. 6-7 [Norvegiae]
1843 *Glycera alba* RATHKE: 173; pl. 9, fig. 9 [Locus typicus: Molde, Norwegen; type: lost]
1843b *Glycera alba* – ÖRSTED: 33; pl. 1, fig. 24; pl. 7, figs. 103, 105, 110 [prope Hellebæk (Denmark); presumed lost]
1865 *Glycera nigripes* JOHNSTON: 188 [Locus typicus: Scotland; paralectotypes (hic): BMNH] partim
1866 *Glycera danica* QUATREFAGES: 187 [Locus typicus: no locality details; ÖRSTED (1843b): prope Hellebæk (Denmark); type: presumed lost]
?1870 *Rhynchobolus minutus* BOBRETZKY: 212; pl. 9, fig. 13-17 [Locus typicus: no locality details, CZERNIAVSKY (1881): Sin. Sevastopol. (harbour of Sevastopol, Black Sea); type: presumed lost]
?1881 *Glycera minuta* Forma *suchumica* CZERNIAVSKY: 382 [Locus typicus: Sin. Suchum. (harbour of Suchumi, Black Sea); type: presumed lost]
?1881 *Glycera minuta* Forma *sevastopolica* CZERNIAVSKY: 383 [Locus typicus: Sin. Sevastopol. (harbour of Sevastopol, Black Sea); type: presumed lost]

Material examined:

Type material: *Glycera nigripes*: Scotland; 2 paralectotypes: af/42/101/3.0/2.0; af/35/81/3.2/2.0 (BMNH partim)

Additional material: Norwegian Sea: Norway, Vågsøy St. 1, 62°00'53.2"N 5°08'26.6"E, 3.IX.1996, 13 m, sand-like broken shells slightly silty with gravel and pebbles; cs/34/115/3.5/2.5 (ZMMSU) - Florou; af/22/57/4.0/2.5 (ZMB 93 partim) - England, off Shetlands; cs/42/126/4.5/2.9; af/47/104/5.0/3.6; af/37/85/5.2/4.0; af/17/54/4.0/3.0; af/10/41/3.8/2.2 (BMNH 1865.3.9.14 partim) — North Sea: Norway, Bergen, 1903; cs/61/106/5.0/3.0; af/56/80/5.0/3.0; af/54/76/5.5/3.7 (SMF 9606) - Bergen; cs/42/115/4.3/2.8; af/30/63/4.4/2.8 (ZMB Q. 4303) - R/V EUGENIE St. 15, Norway, Fahrsund, 15 fms; af/26/76/4.0/2.6 (SSM 972) - Norway, Drøbak, 60 fms; af/29/79/3.5/2.0 (SSM 973) - Norway, 1884; cs/48/108/5.8/4.2; cs/27/105/4.2/3.0; cs/25/105/3.8/2.7; cs/23/107/3.8/2.7; af/33/74/4.5/3.0; af/26/94/3.3/2.2; af/21/73/3.4/2.4; af/20/84/3.2/2.2 (SMF 9607) - Norway; cs/58/99/6.2/4.7; af/28/66/5.5/4.3 (ZMB Q. 4300) - Norway, Denmark; cs/47/122/5.0/2.8; cs/39/102/3.3/2.0; cs/31/111/4.2/2.5; cs/25/94/3.3/2.6; af/67/105/5.0/2.8 (ZMB Q. 4301 partim) - Exp. Pomerania, Sweden, Marstrand; cs/65/117/5.6/3.9 (ZMB 590) - Exp. Pomerania, Marstrand; af/33/77/4.2/2.4 (ZMB 624) - Kattegat; cs/46/113/3.4/2.2; af/38/106/3.1/2.0 (MNHN A119) - Denmark; cs/17/59/2.4/1.3; af/44/83/4.0/2.5; af/19/45/4.3/2.4 (BMNH 1882.5.12.69) - R/V SENCKENBERG DOG D St. 42/1 RD, 55°52.50'N 3°30.00'E, 31.VII.1995, 58.6 m; af/32/65/4.2/2.6 (SMF 9608) - R/V SENCKENBERG ICES 1986 St. 117, 55°43.02'N 2°30.00'E, 18.IV.1986, 82.8 m; af/26/67/4.6/3.2; af/20/60/3.2/2.1; af/13/57/3.2/2.4; af/12/47/3.5/2.5 (SMF 4472) - R/V SENCKENBERG DEB 1987 St. 6 vV, 55°00.02'N 6°20.02'E, 24.V.1987, 46 m; cs/19/90/2.1/1.6; af/12.5/47/1.5/1.0 (SMF 4867) - R/V SENCKENBERG DEB 1987 St. 6 Ku, 55°00.02'N 6°20.02'E, 24.V.1987, 46 m; cs/5.3/52/1.1/0.7; af/4/23/1.1/0.7 (SMF 4866) - R/V SENCKENBERG DOG F St. 27 vV, 54°57.00'N 2°53.67'E, 19.VII.1997, 21.4 m; af/40/114/4.4/3.0 (SMF 9609) - R/V SENCKENBERG DOG F St. 24 vV, 54°55.59'N 2°56.97'E, 19.VII.1997, 21.2 m; cs/28/110/3.6/2.7 (SMF 9610) - R/V SENCKENBERG DOG F St. 26 vV, 54°50.66'N 2°48.53'E, 19.VII.1997, 19.4 m; cs/34/111/4.0/2.8; af/29/74/4.1/2.9 (SMF 9611) - R/V SENCKENBERG DOG F St. 13 vV, 54°26.01'N 2°21.39'E, 16.VII.1997, 20.1 m; cs/17/70/4.0/2.7 (SMF 9612) - R/V SENCKENBERG DEB 1987 St. 14 vV, 54°20.02'N 5°40.00'E, 25.V.1987, 42 m; af/15/64/2.2/1.6 (SMF 4868) - R/V SENCKENBERG ICES 1986 St. 61, 54°15.01'N 5°30.00'E, 21.IV.1986, 41.5-42 m; af/23/78/4.0/2.6; af/21/62/3.2/2.2 (SMF 4473) - R/V SENCKENBERG DEB 1987 St. 2 vV, 54°10.00'N 5°39.50'E, 24.V.1987, 44 m; af/24/91/3.9/2.8 (SMF 4864) — NE Atlantic: France, Bretagne, 15.VIII.1922; af/25/69/5.0/3.5; af/23/73/3.6/2.3 (MNHN A347) — Mediterranean Sea: France, Banyuls-sur-Mer St. II, 42°29.44'N 3°08.76'E, 24.III.1997, 28 m, mud; cs/20/103/2.5/1.8 (SMF 9613) - Banyuls-sur-Mer, 4.IX.1997, 30 m, mud; cs/15/89/2.0/1.1 (SMF 9614) - Banyuls-sur-Mer, 4.IX.1997, 30 m, mud; cs/31/110/3.1/2.2; cs/16/87/2.0/1.3 (SMF 9615) - Banyuls-sur-Mer, 4.IX.1997, 60 m, mud; cs/19/89/2.2/1.5 (SMF 9616) - Banyuls-sur-Mer, 9.IX.1997, 30 m, mud; cs/16/83/1.8/1.2 (SMF 9617) - Banyuls-sur-Mer, 9.IX.1997, 50 m, mud; af/19/79/2.8/2.1; af/17/88/2.2/1.4 (SMF 9618) - Banyuls-sur-Mer, 9.IX.1997, 60 m, mud; cs/16/90/2.1/1.3; cs/16/84/2.3/1.5; cs/16/84/2.1/1.3 (SMF 9619) - R/V GYF St. 383, Marseille, 18.XII.1953; af/18/44/3.2/1.8 (SMF 9620) - Croatia, Istrien, Rovinji, Limski Channel near Sotto Castello, 21.VIII.1989; af/9/51/1.8/1.1 (SMF 9621) - Limski Channel near Sotto Castello, 13.IX.1983, 28 m; cs/24/91/2.2/1.5; af/25/84/2.5/1.9; af/19/77/1.8/1.0; af/16/49/2.8/2.0; af/13/47/2.3/1.8; af/12/57/2.1/1.3 (SMF 9622) - Rovinji, Drije Sestrice, 14.IX.1983, 9-10 m; af/28/61/2.4/1.8 (SMF 9623) - Greece, N Aegean Sea, Kalloni Gulf, St. K 8a, V.1995, 10 m; cs/11/66/1.4/0.9 (SMF 9624) - Cyprus, Akrotiri Bay, SLMB1531 SB76B, 13.II.1968, 30 fms; cs/9/69/1.2/0.8; cs/9/50/1.2/0.7; af/6/30/1.1/0.7 (HUJ) - R/V METEOR 25 St. 26 KG1, 32°59.84'N 35°02.23'E, 2.VI.1993, 35.8 m; cs/36/121/3.9/2.8; af/24/85/2.6/1.8 (SMF 9625) - R/V METEOR 25 St. 25 Ku, 32°00.54'N 31°53.70'E - 32°00.55'N 31°52.61'E, 1.VI.1993, 199-196 m; cs/20/92/1.8/1.0; af/10/48/1.5/0.8 (SMF 9626) - R/V METEOR 25 St. 25 ES, 32°00.43'N 31°53.64'E - 32°00.45'N 31°52.85'E, 1.VI.1993, 195-191 m; af/5/25/1.9/1.3 (SMF 9627) - R/V POSEIDON 172-4 St. 553 Ku, Normeless Bank, 36°48.710'N 12°55.590'E - 36°48.530'N 12°50.600'E, 25.IV.1990, 92-94 m; af/24/55/2.7/1.8 (SMF 9628) - Mediterranean Sea; af/44/88/6.3/4.6 (SSM 693) — Black Sea: Black Sea St. 61, 15.VII.1913, 14.5 m, sand; cs/9/57/1.3/0.8 (ZISP 1/23494) — W Indian Ocean: Madagascar, Bay of Ambaro, 13°02.00'S 48°47.00'E, 29.II.1968, 29 m, sand; af/7/35/1.7/1.1 (SMF 9629) - Nosy Bé region, Canyon du Banc cinq mètres St. 3, 07.69, 80 m; cs/21/82/2.4/1.7; af/27/87/2.6/1.9; af/22/83/2.4/1.8 (SMF 9630) - SW of Nosy Bé, 13°24.25'S 48°09.00'E, 28.VIII.1967, 48 m, sand and coarse sand; cs/26/90/2.3/1.7; cs/12/69/1.5/1.0 (SMF 9631) - Nosy Komba St. 11, 13°25.00'S 48°21.00'E, 21.4.67, 15 m; af/16/63/2.5/1.7; af/5/30/1.7/1.2 (SMF 9632) - Tany Kely, 13°28.00'S 48°15.00'E, 17.IV.1969, 20 m, coral sand; af/16/52/1.7/1.0; af/9/38/1.6/1.0 (SMF 9633) - Tany Kely, 13°28.00'S 48°15.00'E, 2.V.1969, 20 m; af/8/37/1.8/1.2 (SMF 9634) - Tany Kely, 13°28.00'S 48°15.00'E, 17.IV.1969, 20m, coral sand; af/22/68/2.4/1.5; af/18/61/2.2/1.6; af/18/49/1.6/1.0; af/16/54/2.2/1.5; af/15/61/2.1/1.3; af/13/61/1.5/1.0; af/12/48/1.8/1.2; af/10/44/1.5/1.0 (SMF 9635) - NW of Bay of Ampasindava St. 11, 13°30.00'S 48°07.00'E, 2.V.1967, 47 m, sand and gravel; af/9/44/2.0/1.4 (SMF 9636) - NW of Bay of Ampasindava St. 11, 13°30.00'S 48°07.00'E, 2.V.1967, 47 m, sand and gravel; cs/28/89/2.6/2.0 (SMF 9637) - NW of Bay of Ampasindava St. 11, 13°30.00'S 48°07.00'E, 24.VII.1967, 47 m, sand and gravel; cs/23/85/1.5/1.0 (SMF 9638) - NW of Bay of Ampasindava St. 11, 13°30.00'S 48°07.00'E, 3.IV.1968, 47 m, sand and gravel; af/14/55/1.4/1.0; af/8/29/1.6/1.0 (SMF 9639) - NW of Bay of Ampasindava St. 11, 13°30.00'S 48°07.00'E, 9.VIII.1968, 47 m,

sand and gravel; cs/21/76/2.3/1.7; af/16/61/1.9/1.2 (SMF 9640) - S Nosy Iranja St. 2, 13°37.00'S 47°50.00'E, 18.XI.1969, 37 m, coral sand; af/6/35/1.4/1.0 (SMF 9641) - Banc Pracel, near Chesterfield Islands St. 36, 15°39.30'S 45°52.30'E, 12.IV.1970, 51 m, sand; cs/22/83/2.3/1.8; af/11/53/2.0/1.4 (SMF 9642) - Banc Pracel, near Chesterfield Islands St. 34, 15°43.45'S 45°52.00'E, 12.IV.1970, 41 m, sand; cs/15/81/1.7/1.3; af/20/72/2.3/1.7 (SMF 9643) - Banc Pracel, near Chesterfield Islands St. 32, 15°54.30'S 45°50.30'E, 12.IV.1970, 33 m, sand; cs/25/91/2.3/1.6; cs/19/90/2.2/1.5; cs/19/83/2.2/1.5; cs/16/72/2.1/1.2; cs/15/78/2.0/1.5; cs/14/79/1.3/0.8; af/17/65/2.6/2.0; af/14/50/2.6/2.0; af/9.5/63/1.4/1.0; af/7/41/1.5/1.0 (SMF 9644) - Banc Pracel, near Chesterfield Islands St. 31, 16°02.30'S 45°49.45'E, 12.IV.1970, 22 m, sand; af/13/61/1.9/1.4 (SMF 9645) - Banc Pracel, near Chesterfield Islands St. 7, 16°21.00'S 43°54.30'E, 9.IV.1970, 28 m, sand; af/18/76/2.1/1.5 (SMF 9646) - Banc Pracel, near Chesterfield Islands St. 8, 16°21.00'S 43°50.30'E, 9.IV.1970, 35 m, sand; af/19/62/2.5/1.9; af/10/38/2.6/2.0; af/8/35/2.3/1.7 (SMF 9647) - Banc Pracel, near Chesterfield Islands St. 9, 16°21.45'S 43°45.00'E, 9.IV.1970, 32 m, sand; cs/23/88/2.1/1.3; af/8/32/2.2/1.4 (SMF 9648) — Bay of Bengal: Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — NW Pacific: Japan, off Funabashi, Sanbanze, 20.V.1985, about 50 m, mud flat; af/18/49/2.7/2.0 (CBM) - USS ALBATROSS St. 3707, Japan, off Honshu Island, Ose Zaki, S 53° W 2.25 miles, 8.V.1900, 63-75 fms, volcanic bottom with sand and gravel; af/14/40/3.0/2.0 (USNM 5353) - USS ALBATROSS St. 3740, Ose Zaki, S 50° W 0.83 miles, 17.V.1900, 55-65 fms, volcanic bottom with sand, shells and pebbles; cs/35/113/4.1/2.8; af/25/67/3.2/2.3 (USNM 5354) - Yakushima-Island, near Kagoshima, St. 6, V.1996, 80-100 m; af/13/40/2.8/1.8 (CBM) — South China Sea: China, Hainan, St. 6144, 22.IV.1959, 148 m; af/31/103/3.2/1.8; af/21/60/3.2/1.9 (SMF 9649)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with long stalk and some longitudinal ridges on nail; ailerons with pointed triangular bases; parapodia of mid-body with slender triangular notopodial and shorter, more or less rounded neuropodial postchaetal lobes; simple, digitiform branchiae, situated termino-dorsally on parapodia.

Description: Body up to 75 mm long with up to 126 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 9-11 rings (fig. 109a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with long stalk and some longitudinal ridges on nail; 2. less numerous digitiform papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 109b, 110). Aileron with pointed triangular base (fig. 109c). First two parapodia uniramous; following parapodia biramous (fig. 109d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and slender triangular, distinctly longer than rounded, at first sometimes also slightly blunt triangular neuropodial lobe; notopodial lobe in posterior parapodia slender and elongated; in last parapodia notopodial lobe generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, simple, digitiform; starting from about 17th to 30th parapodium to near posterior end; situated termino-dorsally on parapodia; best developed in mid-body region, about as long as prechaetal lobes.

Remarks: O'CONNOR (1987) described that the species occurs from 10 to 300 m (see "Appendix", p. 207).

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; 9-199 m (fig. 111)

Discussion: The descriptions of O.F. MÜLLER (1776, 1784 and 1788) for *Nereis alba* are rather vague, as also reported by RATHKE (1843). The drawings (O.F. MÜLLER 1788, fig. 6-7) simply represent a glycerid. The actual species is unknown, because the type material is lost. Nevertheless, the name *Glycera alba* (MÜLLER 1776) is retained for this taxon. A more detailed description is given by RATHKE (1843), who compared his *Glycera alba* with O.F. MÜLLER's *Nereis alba*.

Two of the type specimens of *Glycera nigripes* JOHNSTON 1865 are not in accordance with the original description. The herewith fixed paralectotypes are identical to *Glycera alba*.

GRUBE (1870a) reported that QUATREFAGES (1866) established the taxon *Glycera danica* for specimens described by ÖRSTED (1843b) as *Glycera alba* (MÜLLER). After the examination of ÖRSTED's and RATHKE's material, GRUBE (1870a) believed them to be identical.

The description and drawings of *Rhynchobolus minutus* BOBRETZKY 1870 are based on juvenile specimens in which the branchiae are not yet fully developed. On the basis of the ailerons and the long proboscidial papillae (pl. 9, figs. 15-16) this taxon is questionably believed to be the same as *Glycera alba*.

It is believed that CZERNIAVSKY (1881) established the probably epitokous subspecies *Glycera minuta suchumica* while examining comparative material of BOBRETZKY (1870). Furthermore, he renamed BOBRETZKY's *Rhynchobolus minutus* as *Glycera minuta sevastopolica*. The taxa are questionably referred to *Glycera alba*, especially in view of the eight-ringed prostomium.

Glycera natalensis DAY 1957

Figs. 112-114

1957 *Glycera natalensis* DAY: 86, fig. 5k-o [Locus typicus: Durban (South Africa); holotype: BMNH 1961.16.31]

1965 *Glycera taprobanensis* SILVA: 550, fig. 9a-l [Locus typicus: Mount Lavinia, Ceylon; holotype: BMNH 1963.14.3]

Material examined:
Type material: *Glycera natalensis*: South Africa, Natal St. NA 151, Durban, surf beach, 12.I.1952; holotype: cs/63/160/2.3/1.8 (BMNH 1961.16.31) - paratype: cs/42/156/1.2/0.9 (SAM A20978) — *Glycera taprobanensis*: Sri Lanka, Mount Lavinia, intertidal, sandy beach, XII.1961; holotype: cs/65/159/3.3/2.7 (BMNH 1963.14.3)

Additional material: Arabian Sea: India, Maharashtra, Ratnagiri, Mandvi Jetty, 3.III.1969, muddy beach; af/42/117/2.2/1.5 (USNM 48947) — Bay of Bengal: Burma, Rangoon; cs/26/143/2.0/1.5 (USNM Acc. No. 106702) - Thailand, Andaman Sea (ZMUC, pers. com. D. EIBYE-JACOBSEN)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with long ridged stalk and some longitudinal ridges on nail; ailerons with triangular bases; parapodia of mid-body with slender triangular notopodial and shorter, rounded neuropodial postchaetal lobes; simple, digitiform branchiae, situated termino-dorsally on parapodia.

Description: Body up to 72 mm long with up to 199 segments. Anterior segments biannulate, anterior annulus longer than posterior one; mid-body segments more or less distinctly triannulate, two anterior annuli of about same length, posterior annulus slightly longer; median region (about 20th to 62nd segment) dorsally with up to 4 tubercles on each side. Conical prostomium consisting of about 16-21 rings (fig. 112a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with long stalk with numerous V-shaped ridges and some longitudinal ridges on nail; 2. less numerous digitiform papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 112b, 113). Aileron with triangular base (fig. 112c). First two parapodia uniramous; following parapodia biramous (fig. 112d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and slender triangular, slightly longer than rounded neuropodial lobe; notopodial lobe in posterior parapodia slender and elongated; in last parapodia notopodial lobe generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, simple, digitiform; starting from about 32nd to 54th parapodium to near posterior end; situated termino-dorsally on parapodia; best developed in mid-body region, about as long as prechaetal lobes.

Remarks: Some of the specimens have incompletely developed branchiae (holotype of *Glycera natalensis*, BMNH 1961.16.31) or distorted postchaetal lobes (holotype of *Glycera taprobanensis*, BMNH 1963.14.3).

Distribution: Southwestern Indian Ocean, Arabian Sea, Bay of Bengal; intertidal (fig. 114)

Discussion: The description and drawings of *Glycera natalensis* DAY 1957 correspond largely with the type specimens. DAY (1957) reported that branchiae are absent, but even the holotype shows slight termino-dorsal swellings on the parapodia which suggest incompletely developed branchiae. The numerous ridges on the stalk of the proboscidial papillae and the tubercles on the body could not be observed using light microscopy, due of the poor condition of the type material.

The holotype of *Glycera taprobanensis* SILVA 1965 has been examined and is referred to *Glycera natalensis*. The parapodia of this very large specimen appear distorted, but two postchaetal lobes are distinguishable just as indicated by SILVA who stated that: "The dorsal part of the postsetal lobe is somewhat projecting forming a small lip as it were." (1965, p. 552). The prostomium consists of 16 instead of 25 rings and the undescribed numerous ridges on the stalk of the proboscidial papillae and tubercles on the body were perceived using light microscopy. SILVA (1965) reported that the specimens are from Galle Face, Angulana, Ratmalana and Wadduwa, but the label states 'Mount Lavinia' to be the locus typicus. SILVA (1965) originally indicated the type specimen to be a lectotype which is believed to be a lapsus calami.

Glycera africana ARWIDSSON 1899
Figs. 115-117

1899 *Glycera africana* ARWIDSSON: 21; pl. 1, figs. 10-12 [Locus typicus: no locality details, AUGENER (1918) Bugama, Nigeria; syntypes: HZM V-1743]

Material examined:
Type material: *Glycera africana*: Nigeria, Bugama, in the river; 2 syntypes: cs/97/227/6.0/4.0; cs/78/234/5.2/3.7 (HZM V-1743)

Additional material: E Atlantic: Liberia, Monrovia, 13 m; af/30/100/3.0/2.0 (HZM V-1118) - Liberia, Grand Bassa, 17 m, mud and sand; cs/63/169/4.0/2.8 (HZM V-1108) - Grand Bassa, 17 m, mud and sand; af/30/108/2.4/1.5 (SMF 8548) - Ghana, Accra, 11 m, mud; af/33/105/3.0/2.0; af/18/64/3.0/2.0 (HZM V-1115) - Nigeria, Bugama, in the river; af/25/104/4.0/2.8 (HZM V-1111) - Gabun, Setté Cama, 13 m, soft bottom; cs/38/132/3.0/2.0; af/11/47/2.0/1.2 (HZM V-1121) - Angola, Cabinda, Landana, 9 m, soft mud; af/19/46/2.8/1.8; af/17/40/3.0/2.0 (HZM V-1120) — SE Atlantic: Namibia, Lüderitz-Bay; cs/63/175/5.2/4.3; cs/55/169/5.0/4.0 (ZMB 4110) - Namibia, 70 m N Orange River mouth, 1962; cs/30/123/3.3/2.4; af/47/147/4.2/2.8 (SAM A19992) — W Indian Ocean: Madagascar, Banc Pracel, near Chesterfield Islands St. 14, 17°37.00'S 43°33.33'E, 10.IV.1970, 40 m, sand; af/18/70/2.3/1.6 (SMF 9650) — SW Indian Ocean: Moçambique, Morrumbene estuary; af/37/80/2.4/1.8 (SAM A20467) - Madagascar, Prov. Tuléar, Récif de St. Augustin; cs/68/146/3.0/2.2 (MNHN A119) — Bay of Bengal: Thailand, Phuket (ZMUC, pers. com. D. EIBYE-JACOBSEN)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with medium-length stalk and some longitudinal ridges on nail; ailerons with pointed

triangular bases; parapodia of mid-body with slender triangular notopodial and shorter, more or less rounded neuropodial postchaetal lobes; simple, digitiform branchiae, situated termino-dorsally on parapodia.

Description: Body up to 97 mm long with up to 234 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 19-28 rings (fig. 115a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with medium-length stalk and some longitudinal ridges on nail; 2. less numerous conical papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 115b, 116). Aileron with pointed triangular base (fig. 115c). First two parapodia uniramous; following parapodia biramous (fig. 115d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and slender triangular, distinctly longer than rounded, at first sometimes also slightly blunt triangular neuropodial lobe; notopodial lobe in posterior parapodia slender and elongated; in last parapodia notopodial lobe generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, simple, digitiform; starting from about 12th to 26th parapodium to near posterior end; situated termino-dorsally on parapodia; best developed in mid-body region, extending far beyond prechaetal lobes.

Remarks: Some specimens with ramifying branchiae (syntypes of *Glycera africana*, HZM V-1743; ZMB 4110). The two syntypes of *Glycera africana* carry numerous small tubercles (up to 10 on the dorsal side and up to 5 below the parapodia) on the 30th to 65th segment. These tubercles are not present on the other specimens, and it is hence suggested that they are only present in larger specimens. AUGENER (1918) described a 109 mm long *Glycera tridactyla* with 197 segments and DAY (1967) a 120 mm long *Glycera convoluta* with 150 segments (see "Appendix", p. 207). Both specimens are referred to *Glycera africana*.

Distribution: West and east coasts of Africa, Bay of Bengal; intertidal to 40 m (fig. 117)

Discussion: The description and drawings of *Glycera africana* ARWIDSSON 1899 agree with the syntypes. ARWIDSSON (1899) originally reported no locus typicus, but according to AUGENER (1918) the locus typicus is 'Bugama' in Nigeria.

Glycera tridactyla SCHMARDA 1861
Figs. 118-120

1861 *Glycera tridactyla* SCHMARDA: 97; pl. 30, fig. 238; textfigs. a-b, k [Locus typicus: Atlantischer Ocean (St. Malo, France); syntypes: NHMW 1006]

?1862 *Glycera convoluta* KEFERSTEIN: 106; pl. 9, figs. 28-29 [Locus typicus: Neapel (Italy); type: lost]

?1863 *Glycera fallax* – CLAPARÈDE: 54; pl. 15, figs. 14-15 (non QUATREFAGES 1850) [St. Vaast, France; lost]

1866 *Glycera branchialis* QUATREFAGES: 182 [Locus typicus: Bréhat (France); holotype: MNHN A120]

?1866 *Glycera retractilis* QUATREFAGES: 185 [Locus typicus: no locality details, CLAPARÈDE (1863): St. Vaast (France); type: lost]

?1870 *Rhynchobolus convolutus* – BOBRETZKY: 215 [presumed lost]

?1881 *Glycera convoluta* Forma *suchumica* CZERNIAVSKY: 381 [Locus typicus: Sin. Suchum. (harbour of Suchumi, Black Sea); type: presumed lost]

?1881 *Glycera convoluta* Forma *sevastopolica* CZERNIAVSKY: 381 [Locus typicus: Sin. Sevastopol. (harbour of Sevastopol, Black Sea); type: presumed lost]

1918 *Glycera convoluta* var. *uncinata* RIOJA: 85, fig. 20a-b [Locus typicus: Colindres, Santander, Gijón (Spain); syntypes: MNCN 16.01/282]

?1921 *Glycera alba* var. *cochinensis* SOUTHERN: 627; pl. 27, fig. 17a-j; textfig. 16a-e [Locus typicus: Cochin Backwater, near Ernakulam (India); type: ? ZSI]

Material examined:
Type material: *Glycera tridactyla*: France, St. Malo; 4 syntypes: cs/92/147/4.4/2.9; cs/45/136/3.0/2.0; af/54/87/4.7/3.0; af/31/75/4.5/3.0 (NHMW 1006) — *Glycera branchialis*: France, Bréhat; holotype: af/47/122/4.1/2.7 (MNHN A120) — *Glycera convoluta* var. *uncinata*: Spain, Santander; 11 syntypes: cs/76/161/5.3/4.2; cs/68/137/3.9/2.4; cs/66/152/5.5/4.2; cs/53/136/4.5/3.0; cs/52/167/5.0/3.5; cs/52/146/4.0/2.6; cs/51/152/4.4/2.9; cs/49/149/4.9/3.5; af/66/119/5.5/4.0; af/65/124/5.6/4.0; af/40/130/4.6/3.3 (MNCN 16.01/282)

Additional material: NE Atlantic: Wales, Aberystwyth; cs/50/135/2.7/2.0 (BMNH) - England, Cornwall, Polperro; cs/99/165/6.0/5.0; af/83/119/6.0/4.6 (BMNH 1862.5.5.2/4) - France, St. Vaast; cs/77/140/4.0/2.7; cs/64/156/4.3/3.2; cs/42/127/4.0/3.0 (ZMB Q. 4299) - Tatihou, 1895; cs/66/155/4.1/2.8; cs/28/139/3.3/2.2; af/34/114/3.2/2.3 (MNHN A117) - Tatihou, 1897; cs/30/151/3.8/2.9; cs/52/147/4.6/3.5; af/30/118/3.0/2.0 (MNHN A117) - St. Malo; cs/59/146/4.4/3.0; af/43/94/5.0/3.9 (ZMB Q. 4313) - Bréhat; cs/105/160/5.4/3.8 (MNHN A119 partim) - Beg an Fry, 13.III.1994; af/45/136/3.7/2.5 (SMF 9651) - Beg an Fry, 15.X.1996; cs/59/162/5.1/3.8; af/40/91/4.3/3.0 (SMF 9652) - St.-Michel-en-Grève, 14.III.1994; cs/70/146/4.2/3.0; cs/44/138/2.9/2.0; cs/19/95/1.4/1.0; af/19/80/1.9/1.3; af/11/56/1.3/0.8; af/10/44/1.8/1.2 (SMF 9653) - St. Efflam, 17.III.1994; cs/28/118/1.7/1.1; cs/23/113/1.5/1.0; cs/16/109/1.3/0.9; af/20/87/2.0/1.5 (SMF 9654) - Carantec, 16.X.1996; cs/82/182/4.2/2.3; cs/82/157/4.4/3.0; cs/75/154/5.2/3.4; cs/68/154/3.7/2.3; cs/64/152/4.8/3.1; cs/64/151/3.9/2.5; cs/64/150/5.0/3.2; cs/64/150/3.9/2.1; cs/63/159/4.9/3.2; cs/63/146/3.7/2.2; cs/61/145/4.1/2.3; cs/60/152/4.3/2.6; cs/60/150/4.3/2.9; cs/60/149/4.7/2.9; cs/59/146/4.1/2.3; cs/58/147/4.4/2.8; cs/58/142/3.6/2.5; cs/56/141/3.6/2.3; cs/56/139/4.0/2.4; cs/54/154/4.2/2.6; cs/54/136/4.2/2.7; cs/53/144/3.8/2.5; cs/52/137/3.2/2.4; cs/50/149/4.2/2.4; cs/

49/154/4.4/3.0; cs/49/143/4.4/2.8; cs/47/144/3.6/2.4; cs/47/132/4.0/2.7; cs/47/123/3.5/2.2; cs/46/136/3.0/2.1; cs/44/164/4.2/3.0; cs/42/133/4.2/2.6; cs/41/138/2.8/1.6; cs/39/143/4.0/2.7; af/60/111/3.1/2.0; af/50/131/4.4/3.2; af/34/73/4.0/2.5; af/27/85/3.0/1.8 (SMF 9655) - Roscoff, Pemprat, 15.x.1996; cs/78/164/4.8/3.2; cs/78/160/4.3/2.7; cs/77/154/4.0/2.3; cs/71/151/4.0/2.6; cs/66/154/5.2/3.3; cs/65/152/4.8/3.4; cs/61/157/4.0/2.2; cs/60/163/5.4/4.1; cs/59/149/4.8/3.3; cs/58/158/5.0/3.8; cs/58/132/5.0/3.5; cs/56/154/4.6/3.4; cs/52/158/4.0/2.3; cs/52/150/4.3/2.7; cs/48/161/4.2/2.9; cs/48/140/4.2/2.7; cs/48/133/4.5/3.0; af/51/119/4.2/2.5; af/50/97/4.6/3.0; af/33/88/4.2/2.7; af/31/82/4.3/2.8 (SMF 9656) - Roscoff, mud flat in front of lab, 12.x.1996; cs/79/168/5.0/4.0; af/56/107/5.8/4.4; af/36/74/4.7/3.4 (SMF 9657) - Roscoff, 12.iii.1994; cs/35/129/2.0/1.3; cs/25/117/1.5/1.0; cs/13/80/1.6/1.1 (SMF 9658) - Roscoff; cs/112/174/4.8/3.7; cs/72/152/4.2/3.0 (ZMB 4836) - Roscoff, St. Pol, 10.x.1996; cs/61/145/5.0/3.7; cs/59/163/5.1/3.8; cs/59/160/5.2/3.8; cs/59/145/4.8/3.3; cs/58/173/5.4/3.9; cs/58/160/4.8/3.2; cs/58/159/4.5/3.3; cs/58/152/5.0/3.8; cs/57/154/4.7/3.2; cs/56/157/5.0/3.8; cs/56/156/5.2/4.0; cs/56/155/5.0/3.4; cs/53/154/5.1/3.6; cs/53/153/5.0/3.6; cs/53/144/4.4/2.7; cs/52/151/4.6/3.0; cs/50/151/5.1/3.5; cs/50/139/4.6/3.0; cs/48/144/4.7/3.1; cs/38/118/5.2/3.8; af/59/166/4.8/3.4; af/58/141/5.2/3.5; af/57/111/4.8/3.2; af/56/131/4.8/3.4; af/56/106/5.2/3.7; af/53/144/5.2/4.1; af/51/120/5.0/3.7; af/49/124/5.1/3.7; af/48/118/4.8/3.2; af/46/136/4.3/2.7; af/45/134/4.3/2.7; af/42/106/5.1/3.7; af/41/126/4.4/2.9; af/40/118/4.5/3.1; af/39/94/5.0/3.7; af/31/80/4.7/3.4; af/26/68/5.1/3.6; af/21/67/4.8/3.3; af/17/52/4.3/2.7 (SMF 9659) - Roscoff, L'Aber, 13.x.1996; cs/103/165/5.1/4.0; cs/98/164/5.2/4.1; cs/91/165/5.9/4.4; cs/79/160/5.0/3.8; cs/77/172/5.4/4.2; cs/76/163/5.0/3.8; cs/73/151/5.5/4.2; cs/55/131/5.0/4.0 (SMF 9660) — Mediterranean Sea: France, 40 km W Marseille, Aux de Vermon, Carro, W Cap Couronne, 26.ii.1965, 6 m, fine sand; af/9/40/1.8/1.3 (SMF 9661) - Marseille, Aux de la Fourse Momsaie, 1.iv.1964, 3.8 m, fine sand; cs/27/125/2.1/1,4 (SMF 9662) - Marseille St. 1983, Bay of Cousse, 20.viii.1965, 5-6 m, fine sand; cs/15/83/2.1/1.7; af/11/52/2.0/1.3; af/10/54/1.7/1.1 (SMF 9663) - Marseille St. 1985, Bandol, 21.viii.1965, 5.5 m, fine sand; af/10/56/1.4/1.0; af/8/42/1.8/1.4 (SMF 9664) - Marseille St. 1992, NW Pointe des Trois Fours, 21.viii.1965, 14-15 m, fine sand; cs/17/115/2.1/1.4 (SMF 9665) - Marseille St. 1993, WSW Cap Saint-Louis, 21.viii.1965, 11.5 m, fine sand; af/14/67/2.2/1.5; af/12/53/1.4/1.0; af/6/37/1.7/1.2; af/5/35/1.6/1.1 (SMF 9666) - Marseille St. 1994, WSW Pointe de Galland, 21.viii.1965, 4.5-5.5 m, fine sand; af/7/31/1.7/1.1 (SMF 9667) - Marseille St. 1996, W Cap Liouquet, 4.5-5.5 m, fine sand; af/12/59/1.9/1.3; af/11/64/1.8/1.3; af/8/34/1.3/0.8 (SMF 9668) - Marseille St. 1998, SE Pointe de Beaumette, 23.viii.1965, 9-10 m, fine sand; cs/18/72/2.3/1.7 (SMF 9669) - Marseille St. 1999, ESE Pointe de Beaumette, 23.viii.1965, 7-8 m, fine sand; af/16/60/2.1/1.6 (SMF 9670) - Italy, Gulf of Gaeta, Licola, 1966-68; cs/63/157/3.1/2.6; cs/43/155/2.4/1.9; af/51/153/2.8/2.1; af/14/47/2.4/1.8 (SMF 9671) - Naples; cs/58/146/4.0/2.8; cs/56/149/3.4/2.5; cs/54/148/3.0/2.0; cs/52/139/3.8/2.8; af/45/115/3.1/2.0 (ZMB 2505) - Naples; cs/72/141/4.2/3.0 (ZMB Q. 4298) - Naples; cs/57/142/4.0/2.8; cs/51/129/3.0/2.0; cs/41/123/2.5/1.6 (ZMB Q. 4310) - Israel, Akko, sandy beach, xii.1983; cs/86/220/4.2/3.0 (HUJ[9]) - Akko, SLM3266, 23.ix.1969, 0-3 cm, sand; cs/41/161/2.4/1.8 (HUJ) - Gaza Tower, SLMB162 Poly 375, 22.xii.1968, 5 fms, gray sand; af/6.5/33/1.2/0.8 (HUJ) - Egypt, Sinai, El Arish, SLM726-8-VI-178, 29.x.1968, 7 fms (13 m); af/13.5/55/1.8/1.3 (HUJ) — Black Sea: Sevastopol, 7.ix.1978; af/18/51/3.1/2.0 (ZISP 93/44452) — SE Atlantic: South Africa, Knysna estuary; cs/78/153/3.7/2.5; cs/71/155/4.0/2.3 (SAM A20477) - Knysna estuary; cs/65/153/3.8/2.5 (SMF 8515) — Arabian Sea: Saudi Arabia, Jubail, Field Research Centre, 24.xi.1991; cs/28.5/104/2.0/1.4; af/14/76/1.6/1.0 (SMF 9672) — Indian Ocean: India, Maharashtra, Ratnagiri, Bhatkae Wada, 26.vi.1971, sandy muddy beach; cs/42/128/2.2/1.5 (USNM 48946) - Portugese India, Mormugao Bay; af/12/42/2.4/2.0 (ZSI W 1868/1) — NW Pacific: N Japan; af/61/201/3.1/2.0 (ZMB Q. 4311) — South China Sea: China, Hainan, Bo Chao Hou Shui Wan, iv.1992; cs/22/94/1.2/0.8 (SMF 9730) - Hainan, Lingchang, St. 2, 7.iv.1992; af/16/53/2.2/1.5 (SMF 9673) - Lingchang, St. 3, 7.iv.1992; af/36/92/1.7/1.0 (SMF 9674) - Hainan, Shalao, 3.iv.1992, sand; cs/42/135/2.0/1.5; af/20/93/1.9/1.4; af/16/56/1.9/1.3 (SMF 9675) — W Pacific: Papua New Guinea, Bismarck Archipelago, Ralun; cs/42/125/3.0/2.0 (ZMB 2963 partim) - Australia, Queensland, Townsville, Pallarenda Beach, 1979, intertidal; cs/33/101/1.7/1.2; cs/22/102/1.5/1.0; cs/20/104/1.5/1.0; cs/20/99/1.5/1.0; cs/18/93/1.5/1.0 (AM W17259 partim) - Pallarenda, nr. 257, 20.iii.1989, beach, sandflat; cs/15.5/83/1.3/0.8 (AM W25610) — Tasman Sea: Australia, Queensland, Gold Coast, canal system, 3.iv.1986, 3-5 m, sand; af/14/73/3.0/1.9 (AM W201470) - New South Wales, Botany Bay, Kurnell, Silver Beach, 18.ix.1979, intertidal; cs/32/111/2.5/1.9; cs/22/96/1.8/1.3 (AM W17684) - N of Kurnell, St. 65, 24.i.1977, 5 m, sand; cs/31/99/2.1/1.6; cs/12/86/1.4/0.9; cs/8/65/1.1/0.7 (AM W14226) - New South Wales, Port Hacking, St. 567, 1974, sand; cs/17/95/1.8/1.2; cs/14/83/1.7/1.2 (AM W195256 partim) - Victoria, Gypsy Point, 10 miles NW of Mallacoota, 19.ii.1973, 6 m, mud; cs/44/115/3.0/2.0; cs/37/112/3.1/2.0 (MV F 80200)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with short stalk and some longitudinal ridges on nail; ailerons with triangular bases; parapodia of mid-body with slender triangular notopodial and shorter, more or less rounded neuropodial postchaetal lobes; simple, digitiform branchiae, situated termino-dorsally on parapodia, from anterior to near posterior end.

Description: Body up to 112 mm long with up to 220 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 12-15 rings (fig. 118a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with short stalk and some longitudinal ridges on nail; 2. less numerous conical papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 118b, 119). Aileron with triangular base (fig. 118c). First two parapodia uniramous; following parapodia biramous (fig. 118d-l). Two slender triangular to digitiform prechaetal lobes of about same length; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and slender triangular, distinctly longer than rounded, at first sometimes also slightly blunt triangular neuropodial lobe; notopodial lobe in posterior parapodia slender and elongated; in last parapodia notopodial lobe generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, simple, digitiform; starting from about 11th to 32nd parapodium to near posterior end; situated termino-dorsally on parapodia; best developed in mid-body region, extending beyond prechaetal lobes.

Remarks: Some of the specimens with ramifying branchiae (e.g. syntypes of *Glycera convoluta* var. *unci-*

nata, MNCN 16.01/282; HUJ; SMF 9659). KEFERSTEIN (1862) described 170 mm long specimens of *Glycera convoluta*.

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; intertidal to 55 m (fig. 120)

Discussion: The description and drawings of *Glycera tridactyla* SCHMARDA 1861 mainly correspond with the syntypes. SCHMARDA (1861) reported only the 'Atlantic Ocean' as the locus typicus, but on the original label 'St. Malo' is noted.

The type material of *Glycera convoluta* KEFERSTEIN 1862 is lost, but the description and drawings show that this taxon might be identical to *Glycera tridactyla*.

The type specimens of *Glycera branchialis* QUATREFAGES 1866 and *Glycera convoluta* var. *uncinata* RIOJA 1918 have been examined and are referred to *Glycera tridactyla*.

EHLERS (1868) reported that QUATREFAGES (1866) established the taxon *Glycera retractilis* for specimens, described by CLAPARÈDE (1863) as *Glycera fallax* QUATREFAGES 1850. CLAPARÈDE's (1863) description and drawings are not very detailed, but the specimens are questionably suggested to be the same as *Glycera tridactyla*.

It is believed that CZERNIAVSKY (1881) described the probably epitokous subspecies *Glycera convoluta suchumica* while examining comparative material of BOBRETZKY (1870). Furthermore, he renamed BOBRETZKY's material of *Rhynchobolus convolutus* as *Glycera convoluta sevastopolica*. Both taxa are questionably referred to *Glycera tridactyla*, especially in view of the fourteen-ringed prostomium.

The description and drawings of *Glycera alba* var. *cochinensis* SOUTHERN 1921 suggest that this taxon is a synonym of *Glycera tridactyla*, but the classification is questionable because it was impossible to get the type material, which might be in the ZSI.

Glycera prosobranchia BÖGGEMANN & FIEGE 2001
Figs. 121-123

2001 *Glycera prosobranchia* BÖGGEMANN & FIEGE: 38, figs. 6, 9c-d, 10 [Locus typicus: Rio Chagres, Panama; holotype: USNM 186547]

Material examined:

Type material: *Glycera prosobranchia*: Caribbean Sea, Panama, Rio Chagres, near Fort San Lorenzo, St. 234-1, 8.II.1977, 0.5-1.5 m; holotype: cs/54/124/2.6/1.8 (USNM 186547) - Rio Chagres mouth, E shore, St. 148-1, 17.IV.1973, fine sand; paratype: cs/30/145/3.1/2.1 (SMF 9676)

Additional material: NE Pacific: R/V EL PUMA, Mexico, Gulf of California, Cortés II St. 37, 31°16.1'N 114°21.7'W, 16.III.1985, 30.3 m; cs/19/109/1.5/1.1; af/11/53/1.7/1.3; af/7/46/1.1/0.7 (UNAM PO-41-005) — E Pacific: R/V EL PUMA, Gulf of Tehuantepec, Mimar III St. 202, 16°06.5'N 95°10.5'W, 20 m; af/33/134/2.3/1.8; af/24/116/2.3/1.7; af/19/81/1.8/1.4; af/18/78/2.0/1.4; af/14/70/1.9/1.3; af/14/60/2.7/2.0; af/13/66/2.0/1.4 (UNAM PO-41-010) - Costa Rica, Gulf of Nicoya St. 14-2, 9°57'05"N 84°45'30"W, 11.VII.1980, 10 m; cs/13/89/1.4/1.0; af/22/111/2.0/1.4; af/21/113/2.2/1.7 (USNM 79980) - Gulf of Nicoya St. 35-2, 9°55'42"N 84°47'40"W, 12.VI.1980, 14 m; cs/15/90/0.9/0.6 (USNM 79981) - Gulf of Nicoya St. 2-2, 9°55'28"N 84°52'05"W, 12.VI.1980, 20 m; af/26/76/3.6/2.7 (USNM 79984) - Gulf of Nicoya St. 13-2, 9°52'30"N 84°43'50"W, 10.VI.1980, 28 m; af/42/134/2.4/1.8 (USNM 79983) - Panama, off Balboa, St. 141-C, 8°55.55'N 79°31.56'W, NE of causeway, 10.IV.1973; cs/15/93/1.9/1.3; af/24/118/1.9/1.3 (USNM 186548) - Panama, Farfan Beach, St. 134-2, sieving on slope of canal channel, 6.IV.1973; cs/34/155/2.6/1.9; cs/24/114/2.0/1.4 (USNM 186549) - Panama, Venado Beach, St. 80-1, 19.III.1972, about 2 ft, muddy sand; cs/19/134/2.0/1.4; cs/18/110/1.5/1.0; af/19/96/2.3/1.8 (USNM 186550)

Diagnosis: Proboscidial papillae mainly with terminal fingernail structure with short stalk and some longitudinal ridges on nail; ailerons with triangular bases; parapodia of mid-body with slender triangular notopodial and shorter, rounded neuropodial postchaetal lobes; simple, digitiform branchiae, situated termino-dorsally on parapodia, limited to anterior half of body.

Description: Body up to 54 mm long with up to 155 segments. Mid-body segments biannulate; anterior annulus about as long as posterior one or slightly longer. Conical prostomium consisting of about 11-13 rings (fig. 121a). Proboscis with three types of papillae: 1. numerous papillae with terminal fingernail structure with short stalk and some longitudinal ridges on nail; 2. less numerous conical papillae with indistinctly straight, median, longitudinal ridge; 3. isolated, broader, oval to globular papillae without ridges (figs. 121b, 122). Aileron with triangular base (fig. 121c). First two parapodia uniramous; following parapodia biramous (fig. 121d-l). Two slender triangular to digitiform prechaetal lobes, notopodial lobe usually slightly longer than neuropodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial one. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and slender triangular, longer than rounded neuropodial lobe; notopodial lobe in posterior parapodia more slender, in last parapodia notopodial lobe generally shorter. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus slender triangular to digitiform, about as long as neuropodial postchaetal lobe; in posterior parapodia slender and elongated; in last parapodia about as long as neuropodial prechaetal lobe; situated medio-ventrally on parapodia. Branchiae non-retractile, simple, digitiform; from about 11th to 90th parapodium, situated termino-dorsally on parapodia; best developed in mid-body region, extending far beyond prechaetal lobes.

Remarks: One of the specimens (USNM 79980) with ramifying branchiae.

Distribution: East Pacific, Mexico to Panama, Caribbean coast of Panama; intertidal to 30 m (fig. 123)

Discussion: *Glycera prosobranchia* and *Glycera tridactyla* SCHMARDA 1861 have similar proboscidial papillae, ailerons, and parapodia. However, the branchiae are restricted to the anterior parapodia in *Glycera prosobranchia*, whilst in *Glycera tridactyla* they continue for the length of the body. In addition, *Glycera tridactyla* is geographically known to occupy the coasts of Europe, Africa, Asia and Australia, whereas *Glycera prosobranchia* has only been found on the east Pacific coast and the Caribbean coast of Panama.

Genus *Glycerella* ARWIDSSON 1899

Type species (M): *Glycerella magellanica* (MCINTOSH 1885): 349
Synonym: *Pseudolacydonia* RULLIER 1964: 150

Diagnosis: Body with numerous segments, elongated, tapering at both ends. Segments triannulate. Prostomium consisting of four rings, appendages relatively long. Ailerons rod-like. First two parapodia uniramous, consisting of neuropodia, ventral cirri and compound chaetae, dorsal cirrus from second parapodium; following parapodia biramous with dorsal and ventral cirri; notopodia and neuropodia indistinctly separated from each other; each parapodium with two prechaetal and two postchaetal lobes. Branchiae absent. Notopodia with simple capillaries, neuropodia in the upper part with spinigerous and in the lower part with falcigerous compound chaetae.

Glycerella magellanica (MCINTOSH 1885)
Figs. 124-126

1885 *Hemipodus* (?) *magellanicus* MCINTOSH: 349; pl. 42, figs. 11-15; pl. 22A, figs. 12-15; pl. 35A, figs. 5, 7 [Locus typicus: Strait of Magellan (Chile); syntypes: BMNH 1885.12.1.244 and 245, BMNH 1921.5.1.2242/3, ZMUC-POL-395]

1950 *Glycerella atlantica* WESENBERG-LUND: 24; pl. 5, fig. 22; pl. 6, fig. 28; map 31 [Locus typicus: South of Iceland: 62°06'N. 19°00'W.; syntypes: ZMUC-POL-394]

1964 *Pseudolacydonia cæca* RULLIER: 151, fig. 8a-k [Locus typicus: St. 75, Lat. 16°04'20"N, Long. 22°08'10"W, Cap Vert (Cape Verde); holotype: MNHN A383]

Material examined:
Type material: *Hemipodus magellanicus*: HMS CHALLENGER St. 306A, Strait of Magellan, Messier Chanel, 48°27'S 74°30'W, 2.I.1876, 345 fms, blue mud; 8 syntypes: cs/43/105/3.3/2.2; cs/24/78/3.0/2.0; af/37/89/3.0/2.0; af/35/64/4.2/3.0; af/22/53/4.7/3.2; af/14/39/2.2/1.5; af/13/36/4.1/2.7; af/6/21/4.1/2.6 (BMNH 1885.12.1.245) - 3 syntypes: cs/65/108/4.6/3.0; cs/46/111/4.4/2.9; af/35/70/4.5/3.0 (BMNH 1921.5.1.2242/3) - syntype: cs/35/103/4.0/2.3 (ZMUC-POL-395) - HMS CHALLENGER St. 310, Strait of Magellan, 51°27'S 74°3'W, 10.I.1876, 400 fms, blue mud; 10 syntypes: cs/43/100/3.9/2.5; cs/36/84/2.6/1.6; cs/35/89/3.2/2.0; cs/35/85/3.0/1.9; cs/35/84/3.0/1.9; cs/33/90/4.2/3.0; cs/29/83/2.8/1.8; cs/28/82/2.9/1.7; af/22/71/2.8/1.8; af/15/48/3.2/2.0 (BMNH 1885.12.1.244) — *Glycerella atlantica*: R/V INGOLF St. 64, S of Island, 62°06'N 19°00'W, 1.VI.1896, 1960 m; 3 syntypes: cs/62/118/4.0/2.3; cs/50/118/4.0/2.3; cs/29/104/2.8/1.9 (ZMUC-POL-394) — *Pseudolacydonia caeca*: R/V CALYPSO St. 75, Cap Vert, 16°04'20"N 22°08'10"W, 25.XI.1959, 45 m, with shells; holotype: af/17/63/1.5/1.0 (MNHN A383)

Additional material: N Atlantic: Azores St. 584, 38°30'30"N 26°50'15"W, 16.VII.1895, 845 m; cs/38/72/4.1/2.2; af/34/69/3.8/2.3 (MNHN A416) — W Atlantic: Barbados St. 1442, Alleynes Bay off Holetown, St. James, about 800 m offshore, 19.II.1964, 90-100 m, muddy sand with shell debris; cs/13/59/1.2/0.7; cs/5/29/0.5/0.3; af/8/44/1.2/0.7; af/6.5/28/1.2/0.7; af/2.8/20/0.5/0.3 (ZMA) - Barbados St. 1443, Alleynes Bay off Holetown, St. James, about 1600 m offshore, 19.II.1964, 180-200 m, muddy sand with shell debris; af/5/36/1.0/0.5 (SMF 8661) — SW Indian Ocean: Marion and Prince Edwards Islands, 46°54.90'S 37°33.19'E, 22.IV.1989, 606-775 m; af/83/90/4.1/2.2; af/20/36/4.2/2.6 (SAM A21224) - Marion and Prince Edwards Islands, 46°54.90'S 37°33.19'E, 22.IV.1989, 606-775 m; af/51/70/4.1/2.2 (SMF 8514) — S Pacific: USNS ELTANIN St. 1345, 54°50-51'S 129°48-46'W, 7.XI.1964, 915-1153 m; af/33/55/4.4/3.0; af/21/60/5.0/3.5 (USNM 55957)

Diagnosis: Proboscidial papillae digitiform with straight, median, longitudinal ridge; ailerons rod-like; parapodia of mid-body with blunt triangular notopodial and slightly shorter, rounded neuropodial postchaetal lobes; branchiae absent.

Description: Body up to 83 mm long with up to 118 segments. Mid-body segments triannulate; anterior annulus the shortest and medium annulus the longest. Conical prostomium consisting of 4 rings, posteriormost annulus with indication of a 5th ring (fig. 124a). Proboscis with one type of papillae: numerous digitiform papillae with more or less distinctly straight, median, longitudinal ridge (figs. 124b, 125). Aileron rod-like (fig. 124c). First two parapodia uniramous; following parapodia biramous (fig. 124d-l). Two slender triangular to digitiform prechaetal lobes; notopodial lobe always longer and wider than notopodial lobe; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe generally slightly shorter. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe elongated and blunt triangular, slightly longer than rounded neuropodial lobe; in posteriormost parapodia notopodial lobe generally shorter and rounded. Dorsal cirrus from 2nd parapodium, conical to oval; inserted - most clearly in anterior part of body - on body wall above parapodial base. Ventral cirrus in anterior parapodia relatively wide and conical, in posterior parapodia more slender triangular to digitiform, about as long as neuropodial postchaetal lobe; situated near parapodial base. Branchiae absent.

Distribution: North Atlantic, Agulhas Basin, Pacific-Antarctic Basin; 45-1960 m (fig. 126)

Discussion: The description and drawings of *Hemipodus* (?) *magellanicus* MCINTOSH 1885 predominantly agree with the syntypes. MCINTOSH (1905) confirmed that this taxon represents a new genus and proposed the name *Breviglycera*, but referred to the priority of ARWIDSSON's (1899) *Glycerella*.

The type specimens of *Glycerella atlantica* WESENBERG-LUND 1950 and *Pseudolacydonia caeca* RULLIER 1964 have been examined and are believed to be identical to *Glycerella magellanica*. RULLIER (1964) reported that *Pseudolacydonia caeca* has no jaws, but these for glycerids typical structures are present on the holotype.

Genus ***Hemipodia*** KINBERG 1865

Type species (SD hic): *Hemipodia simplex* (GRUBE 1857): 177
Synonym: *Hemipodus* QUATREFAGES 1866: 194

Diagnosis: Body with numerous segments, elongated, tapering at both ends. Segments more or less distinctly triannulate. Prostomium consisting of more than five rings, appendages relatively short. Ailerons rod-like. All parapodia uniramous, with one prechaetal and one postchaetal lobe; ventral cirri from first, dorsal cirri from third parapodium. Branchiae absent. Notopodia absent, neuropodia with spinigerous compound chaetae.

Discussion: QUATREFAGES (1865a-b) first described this new genus, but he only used the French name *Hémipode* which does not correspond with the rules of the ICZN. The Latin name *Hemipodus* was later coined in 1866 by QUATREFAGES (see WRIGHT 1867). In the meantime, KINBERG (1865) established the new taxon *Hemipodia patagonica* (see WRIGHT 1867, KINBERG 1910). KINBERG's (1865) diagnosis of the genus *Hemipodia* is related to QUATREFAGES (1865b), but because of the priority rule of the Latin name he is officially the first author of this taxon. *Hemipodia simplex* is now the type species of the genus *Hemipodia*, because *Hemipodia patagonica* is a synonym of this taxon.

Key to the species of *Hemipodia* KINBERG 1865

1. Proboscidial papillae with numerous U-shaped ridges 2
- Proboscidial papillae only with more or less distinctly straight, median, longitudinal ridge; ventral cirri in anterior parapodia conical, in posterior parapodia elongated and more slender triangular to digitiform ..... ***Hemipodia simplex*** (GRUBE 1857) (p. 79, figs. 127-129)

2. Digitiform proboscidial papillae with numerous (usually >20) ridges; anterior segments of adult specimens with more or less distinct tubercles on dorsal side 3
- Conical proboscidial papillae with about 9-18 ridges; anterior segments without tubercles; ventral cirri in anterior parapodia conical to oval, in posterior parapodia elongated and more slender triangular to digitiform ..... ***Hemipodia yenourensis*** (IZUKA 1912) (p. 81, figs. 130-132)

3. Prechaetal lobes slender triangular to digitiform with small digitate distal process 4
- Prechaetal lobes in mid-body relatively broad and more or less triangular without small digitate distal process; all ventral cirri conical to oval; digitiform proboscidial papillae with about 9-40 ridges ..... ***Hemipodia californiensis*** (HARTMAN 1938) (p. 82, figs. 133-135)

4. Digitate distal process on prechaetal lobes starting from mid-body; ventral cirri in anterior parapodia first conical to oval, then more slender triangular to digitiform; digitiform proboscidial papillae with about 14-40 ridges . ..... ***Hemipodia pustatula*** (FRIEDRICH 1956) (p. 83, figs. 136-138)
- Digitate distal process on prechaetal lobes starting from anterior parapodia; all ventral cirri conical to oval; digitiform proboscidial papillae with about 15-34 ridges ..... ***Hemipodia armata*** (HARTMAN 1950) (p. 84, figs. 139-140)

Hemipodia simplex (GRUBE 1857)
Figs. 127-129

1857 *Glycera simplex* GRUBE: 177 [Locus typicus: Valparaiso (Chile), Callao (Peru); holotype: ZMUC-POL-393]
1861 *Glycera micrognatha* SCHMARDA: 93, textfigs. a-c [Locus typicus: Chile bei Valparaiso; syntypes: NHMW 988]
?1861 *Glycera macrorhiza* SCHMARDA: 94, textfigs. a-c [Locus typicus: Chile bei Viña del mar; type: presumed lost]
1861 *Glycera monodon* SCHMARDA: 94, textfig. k [Locus typicus: Chile bei Viña del mar; syntypes: NHMW 989]
1861 *Glycera diodon* SCHMARDA: 94, textfigs. a, k [Locus typicus: Chile an der Playa ancha bei Valparaiso; syntypes: NHMW 984]
1861 *Glycera microdonta* SCHMARDA: 95 [HARTMAN (1959): lapsus calami for *Glycera micrognatha*]
1865 *Hemipodia patagonica* KINBERG: 245 [Locus typicus: Fretum Magalhaense: York Bay (Chile); holotype: SSM Type 526]
1866 *Hemipodus roseus* QUATREFAGES: 194 [Locus typicus: Chili (Chile); holotype: MNHN A122]
?1901 *Hemipodia borealis* JOHNSON: 411; pl. 10, figs. 104, 104a [Locus typicus: Puget Sound (Washington, U.S.A.); type: presumed lost]
1910 *Hemipodia patagonica* – KINBERG: 59; pl. 21, fig. 8b, e-g
1938 *Hemipodus californiensis* HARTMAN: 93, figs. 2-7 [Locus typicus: Morro Bay, California (U.S.A.); paratypes: LACM-AHF Poly 768 partim]
1960a *Hemipodus digitifera* KNOX: 134, figs. 220-226 [Locus typicus: 44°00'S., 176°21'W, Hanson Bay, Chatham Islands (New Zealand); holotype: CM AQ3465]
1960a *Hemipodus biannulatus* HARTMANN-SCHRÖDER: 15, figs. 29-34 [Locus typicus: La Herradura, bei Lima (Peru); holotype: HZM P-15266]
1962a *Hemipodus heteropapillatus* HARTMANN-SCHRÖDER: 111, figs. 109-112 [Locus typicus: Isla Melchor, Südchile; holotype: HZM P-14326]
1981 *Hemipodus rotundus* NONATO: 104, figs. 125-128 (unpublished Ph. D. thesis!) ["Locus typicus": Ilha

Grande, Praia da Tabatinga, Brasil; "holotype": IOUSP] nomen nudum

1990 *Hemipodus heterosetosus* CANTONE: 58, fig. 3a-g [Locus typicus: Rio Pipo (Ushuaia), Argentina; holotype: UC]

Material examined:

Type material: *Glycera simplex*: Valparaiso, Callao, 21.IX.1841; holotype: cs/55/142/2.3/1.8 (ZMUC-POL-393) — *Glycera micrognatha*: Chile, Valparaiso, sand; 7 syntypes: cs/56/155/3.0/1.8; cs/55/129/2.6/1.5; cs/51/156/3.0/2.0; cs/51/151/2.9/1.8; cs/43/127/3.5/2.3; cs/42/99/3.0/2.0; cs/31/118/2.2/1.3 (NHMW No. 988) — *Glycera monodon*: Chile, Viña del Mar, sand; 2 syntypes: cs(af+pf)/61(56+5)/139(118+21)/3.1/2.0; cs/53/131/2.5/1.8 (NHMW No. 989) — *Glycera diodon*: Chile, Playa Ancha near Valparaiso, sand; 5 syntypes: cs/99/175/4.6/3.0; cs/90/175/5.0/3.7; cs(af+pf)/60(33+27)/153(86+67)/2.4/1.6; cs/57/156/3.0/1.9; cs/51/155/3.1/2.2 (NHMW No. 984) — *Hemipodia patagonica*: R/V EUGENIE St. 1851-3, S America, Magellan Strait, Buketten; holotype: af/110/136/4.0/3.0 (SSM Type 526) - R/V EUGENIE St. 406, Magalhaense Strait, York Bay, 4-6 fms; 1 specimen in bad condition (SSM 695) — *Hemipodus roseus*: Chile; holotype: cs/45/124/2.5/2.0 (MNHN A122) — *Hemipodus californiensis*: California, San Luis Obispo County, Morro Bay, VI.1933, intertidal, sandy mud flat; 5 paratypes: cs/102/148/3.0/1.9; cs/102/113/3.0/2.0; cs/84/135/2.6/1.8; cs/83/149/3.0/2.0; cs/59/141/3.0/2.1 (LACM-AHF Poly 768 partim) — *Hemipodus digitifera*: Chatham Island Expedition St. 14, Chatham Islands, Hanson Bay, 44°00'S, 176°21'W, 27.I.1954, 15 fms; holotype: cs/79/166/3.1/1.9 (CM AQ 3465) — *Hemipodus biannulatus*: Peru, near Lima, La Herradura, 28.VII.1950, rocky coast, between stones; holotype: cs(af+pf)/42(7+35)/112(22+90)/1.8/1.0 (HZM P-15266) - Peru, near Lima, San Lorenzo Island, 1.10.52, sand and shells; 4 paratypes: cs/45/126/2.0/1.5; cs/44/119/1.8/1.2; cs/39/119/1.7/1.1; cs/29/120/1.9/1.5 (HZM P-15267) — *Hemipodus heteropapillatus*: Chile, Isla Melchor, 19.6.58, sublittoral, sand and mud; holotype: cs/58/134/5.0/4.0 (HZM P-14326) - 35 paratypes: cs/66/141/4.8/3.8; cs/57/131/5.0/3.8; cs/55/128/4.0/2.7; cs/54/136/4.4/3.4; cs/53/139/4.4/3.4; cs/52/128/5.1/4.1; cs/51/141/3.2/2.3; cs/50/126/2.3/1.7; cs/49/132/3.2/2.1; cs/48/129/4.3/3.2; cs/47/141/4.2/3.0; cs/47/127/4.0/2.8; cs/46/147/2.9/2.0; cs/45/154/2.1/1.3; cs/43/137/4.0/2.8; cs/43/134/4.0/2.8; cs/41/131/4.2/3.0; cs/39/133/3.2/2.2; cs/38/145/2.0/1.1; cs/38/138/2.9/2.0; cs/38/135/2.9/1.8; cs/38/113/2.3/1.6; cs/37/118/2.0/1.2; cs/35/113/3.9/2.5; cs/35/87/2.9/2.0; cs/34/126/1.8/1.2; cs/33/135/3.1/2.0; cs/33/132/2.9/1.9; cs/33/131/2.9/2.0; cs/33/109/2.0/1.2; cs/30/129/2.7/1.8; cs/30/121/4.0/2.8; cs/29/106/2.0/1.2; af/52/117/2.9/1.8; af/40/97/2.1/1.2 (HZM P-15335) — *Hemipodus rotundus*: Brazil, Ilha Grande, Tabatinga Beach, 23°36'S 45°16'W, v.1967, 1 m below the ebb tide, fine sand; "paratype": cs/40/146/4.0/2.7 (SMF 8628) — *Hemipodus heterosetosus*: Argentina, Tierra del Fuego, Rio Pipo, Ushuaia, 26.I.1989, intertidal, under stones; holotype: af/38/121/2.7/1.7 - paratype: af/40/115/2.6/1.5 (UC)

Additional material: NW Atlantic: U.S.A., New York, off SW shores of Long Island, 8.XI.1966; cs/17/97/1.4/1.0 (USNM 50553) - North Carolina, Cape Lookout, 17.VIII.1974, sand with gravel and shells; cs/64/106/1.5/1.1 (USNM 52952) - off South Carolina St. MSO1, 31°44.06'N 80°13.06'W, 21.II.1980, 33 m; cs/13/79/1.0/0.7 (USNM 108003 partim) - off Georgia St. 5C, 31°08'N 80°50'W, 31.VIII.1977, 14 m; cs/9.5/81/0.6/0.4 (USNM 59135) - Florida, St. Lucie, Hutchinson Island St. 5, 27°22.08'N 80°13.06'W, 14.XI.1971, 10.9 m; cs/23/90/1.4/1.0 (USNM 54501) — Gulf of Mexico: Florida, Crystal River Bay, 13.VI.1983, 1.74 m; cs/24/94/2.1/1.4; cs/23/98/1.5/1.0; af/16/68/1.4/0.9 (USNM 131665) - Crystal River St. 29, 22.XI.1983, 1.74 m; cs/40/113/1.7/1.1; af/24/98/1.8/1.3; af/19/83/2.1/1.4 (USNM 131666) - Crystal River Bay St. 12, 8.IX.1983, 4.27 m; cs/21/96/1.5/1.0 (USNM 131667) - Mississippi, Mississippi Sound St. O23, 30°15.03'N 88°49.47'W, 7.XI.1980, 5.5 m; af/28/105/1.8/1.2 (USNM 75468) — SW Atlantic: Brazil, Paranaguá Bay, mouth of Maciel River, 11.VIII.1998, 12 m; cs/17/103/1.4/0.8 (SMF 9677) - Ilha de Santa Catarina, XI.1965; af/9/46/1.1/0.6 (USNM Acc No. 264059) - Argentina, Patagonia, XII.1882; cs/141/169/4.6/3.1; cs/121/163/4.8/3.0 (NHMW) — Bay of Bengal: Thailand, Andaman Sea (ZMUC; BÖGGEMANN & EIBYE-JACOBSEN, in press) — SW Pacific: New Zealand, 34°53.42'S 173°24.31'E, 31.VIII.1978, 15 m; af/12/65/3.2/2.3 (NZOI P647-2) - Wellington Harbour, Kaiwharawhara, c. 41°16'S 174°47'E, III.1993; cs/75/142/4.2/2.7 (NZOI Z8272) - Wellington; cs/40/123/3.0/1.9; cs/33/121/2.1/1.3 (MNHN A435) - 46°35'S 167°55'E, 23.V.1960, 49 m; af/50/118/4.7/3.3 (NZOI B235) - 47°59'S 167°59'E, 16.I.1965, 137 m; af/42/105/3.0/2.1 (NZOI F92) - 48°00'S 168°32'E, 17.I.1965, 134 m; af/69/129/4.9/3.1 (NZOI F97 partim) — Tasman Sea: Australia, New South Wales, Jervis Bay, Murray's Basin, St. 161, 19.X.1972, sand; cs/12/82/1.0/0.6 (AM W17493) - Murray's Basin, St. 160, 19.X.1972, sand; af/12/65/1.2/0.8 (AM W194338) - New Zealand, 39°38.4'S 174°09.13'E, 1.IV.1993; cs/24/113/1.3/0.8 (NZOI U996) — NE Pacific: Canada, British Columbia, Wreck Bay; cs/47/137/3.2/2.0 (USNM 35984) - U.S.A., Washington, San Juan Islands, Argyle Lagoon, 8.IV.1940; cs/151/188/3.3/2.8; cs/131/180/3.2/2.5 (USNM 33396) - San Juan Islands, Smith Island; 1.VIII.1940; cs/155/202/4.2/3.2; cs/138/179/3.0/1.9; cs/112/158/4.1/3.0 (USNM 33399) - Puget Sound, Olalla, 22.VI.1939; cs/56/148/4.1/2.8; cs/41/131/3.9/2.7; cs/38/154/3.9/2.8; cs/38/104/3.1/2.3; af/37/100/2.7/1.6 (USNM 33400) - Seattle, Shilshole Bay, 17.VI.1947; cs/70/136/2.0/1.4 (USNM 33397) - California, Santa Cruz Island; cs/31/158/2.8/2.0 (USNM 35985 partim) - Point Firmin; cs/117/181/3.0/1.8; af/96/145/3.0/1.9 (USNM 15605) - Corona del Mar, 4.III.1939, rocky shore; cs/40/146/2.0/1.4 (USNM 22564) - California, 7.V.1926; cs/79/154/4.3/2.7 (USNM 35982) - Mexico, Bahia Kino, 28°50'N 111°58'W, 9.VIII.1972; cs/32/139/2.2/1.4; cs/17/86/1.4/0.9; af/8/40/1.3/0.8 (USNM 79918 partim) — SE Pacific: Chile, Valparaiso, Algarrobo, about 2 km N of town, 20.III.1974, 0-1 m, rock with cobble and sand; cs/33/112/4.8/3.9 (USNM Acc. No. 308881) - Achipiélago de los Chonos, Isla de Chiloé, XII.1882, coast, under stones; cs/85/149/4.8/3.1; cs/78/138/4.1/2.7 (NHMW 1021) - Strait of Magellan, Punta Arenas; cs/78/129/4.6/3.0 (ZMB 3639) - R/V La Romanche Mission du Cap Horn 1882-83 St. 13, Orange Bay, 24.IX.1882, shore, under stones; cs/85/162/4.6/3.8; cs/71/182/5.0/4.2 (MNHN A122)

Diagnosis: Proboscidial papillae mainly conical with more or less distinctly straight, median, longitudinal ridge; ailerons rod-like; parapodia of mid-body with one short, rounded postchaetal lobe; branchiae absent; ventral cirri in anterior parapodia conical, in posterior parapodia elongated and more slender triangular to digitiform.

Description: Body up to 155 mm long with up to 202 segments. Mid-body segments more or less distinctly triannulate; two anterior annuli of about same length, posterior annulus slightly longer. Conical prostomium consisting of about 7-9 rings (fig. 127a). Proboscis with two types of papillae: 1. numerous digitiform papillae with more or less distinctly straight, median, longitudinal ridge; 2. isolated, broader, oval to globular papillae without ridges (figs. 127b, 128). Aileron rod-like (fig. 127c). All parapodia uniramous (fig. 127d-l). One slender triangular to digitiform prechaetal lobe; in posterior parapodia slightly slimmer and elongated. One short, rounded postchaetal lobe. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus in anterior parapodia conical, shorter than postchaetal lobe; in posterior parapodia elongated and more slender triangular to digitiform; in last parapodia about as long as prechaetal lobe; situated near parapodial base. Branchiae absent.

Distribution: Cold and warm temperate zone, west

and east coasts of North and South America, Bay of Bengal, east coast of Australia, sea around New Zealand; intertidal to 137 m (fig. 129)

Discussion: The description of *Glycera simplex* GRUBE 1857 is not very detailed, but mainly corresponds with the holotype.

The type specimens of *Glycera micrognatha* SCHMARDA 1861, *Glycera monodon* SCHMARDA 1861, *Glycera diodon* SCHMARDA 1861, *Hemipodia patagonica* KINBERG 1865, *Hemipodus roseus* QUATREFAGES 1866 *Hemipodus digitifera* KNOX 1960, *Hemipodus biannulatus* HARTMANN-SCHRÖDER 1960, *Hemipodus heteropapillatus* HARTMANN-SCHRÖDER 1962 and *Hemipodus heterosetosus* CANTONE 1990 have been examined and are referred to *Hemipodia simplex*.

The type material of *Glycera macrorhiza* SCHMARDA 1861 and *Hemipodia borealis* JOHNSON 1901 cannot be located, but the descriptions, drawings and the places of discovery suggest that these taxa might be identical to *Hemipodia simplex*.

Five of the type specimens of *Hemipodius californiensis* HARTMAN 1938 do not match the original description and are identical to *Hemipodia simplex*.

Hemipodus rotundus is a taxon name which can often be found in ecological papers regarding polychaetes of the Brazilian coast (e.g. PAIVA 1993). The name is based on the Ph. D. thesis of E.F. NONATO (pers. com.) from 1981 and is therefore a nomen nudum. One of the original specimens (SMF 8628, gift from E.F. NONATO) shows clearly that the taxon is a synonym for *Hemipodia simplex*.

Hemipodia yenourensis (IZUKA 1912)
Figs. 130-132

1905 *Hemipodus simplex* var. – MCINTOSH: 55, fig. 4
1912 *Hemipodus yenourensis* IZUKA: 250; pl. 23, figs. 14-15 [Locus typicus: Nagahama in the Gulf of Yenoura in Prov. Suruga, Ujina in Prov. Aki, Misaki (Japan); syntypes: UMUT]
1971 *Hemipodus australiensis* KNOX & CAMERON: 30, figs. 17-19 [Locus typicus: Beau Beach, Port Phillip (Australia); holotype: MV F 41746]

Material examined:
Type material: *Hemipodus yenourensis*: Misaki, Japan; syntypes: 44 specimens in bad condition (UMUT) — *Hemipodus australiensis*: Victoria, Port Phillip, "Beau Beach" (? Beaumaris Beach); holotype: cs/117/172/3.4/3.0 (MV F 41746) - paratype: cs/103/148/3.8/3.0 (MV F 41747)

Additional material: NW Pacific: Japan, Boso Peninsula, Katsuura, I.1994, 15-20 m; af/9.5/69/1.0/0.6 (CBM) - Japan, Koba, 34°27'N 156°50'E, 1874; pf/77/125/3.2/2.0 (BMNH 1921.5.1.2241) — SW Pacific: New Zealand, Auckland, lower beach and offshore sands; cs/23/132/1.8/1.2; af/28/108/1.7/1.2 (USNM 33119) — Tasman Sea: Australia, Queensland, Surfers Paradise, III.1992, sandy beach; cs/100/173/4.1/3.2 (AM W20935) - New South Wales, N end of Wollongong Beach, 25.IX.1976, mid tide, fine sand; cs/31/158/1.8/1.3 (AM W17412) - New South Wales, Burrill Lake, 35°22'S 150°26'E, 10.I.1970, intertidal, sand; af/40/146/2.1/1.4 (MV F 41529) - Victoria, Mallacoota, Ocean Beach W of mouth of Betka River, II.1966, from sand around rocks; cs/92/166/4.3/3.2 (MV F 80202) - Victoria, Shallow Inlet, Sandy Point, Wilsons Promontory, 18.I.1966; cs/99/172/3.9/3.0; cs/83/170/3.0/2.2; cs/83/168/2.7/2.0; cs/79/158/2.8/2.0; cs/78/173/2.6/2.0; cs/75/156/1.7/1.3; cs/63/152/2.0/1.6; cs/54/147/1.4/1.0; cs/50/95/2.1/1.7; af/100/129/4.5/3.6 (MV F 80188) - Wilsons Promontory, 18.I.1966; cs/97/161/3.1/2.6 (SMF 8837) - Victoria, Venus Bay, Anderson Inlet, Inverlock, off Point Hughes, 20.II.1981, intertidal; cs/80/153/3.0/2.3 (AM W18617) - New Zealand, Urville Island; cs/58/151/3.6/2.4 (ZMB Q. 4349) - c. 40°54'S 174°59'E, 10.XI.1993, intertidal; cs/30/138/1.8/1.6; af/40/57/2.0/1.7; af/17/48/2.6/2.2; af/7/37/1.2/0.9 (NZOI V453) - c. 40°54'S 174°59'E, 10.XI.1993, intertidal; af/29/55/2.7/2.3; af/28/48/2.0/1.6; af/24/58/2.1/1.6; af/19/48/2.4/2.1; af/19/42/2.2/1.8; af/18/53/1.7/1.2; af/14/35/2.0/1.5 (NZOI V455) - c. 40°54'S 174°59'E, 10.XI.1993, intertidal; af/21/92/1.6/1.2 (SMF 9678)

Diagnosis: Proboscidial papillae mainly conical with about 9-18 ridges; ailerons rod-like; parapodia of mid-body with one short, rounded, sometimes blunt, postchaetal lobe; branchiae absent; ventral cirri in anterior parapodia conical to oval, in posterior parapodia elongated and more slender triangular to digitiform.

Description: Body up to 117 mm long with up to 173 segments. Anterior segments biannulate, anterior annulus longer than posterior one; mid-body segments more or less distinctly triannulate, two anterior annuli of about same length, posterior annulus slightly longer. Conical prostomium consisting of about 6-8 rings (fig. 130a). Proboscis with two types of papillae: 1. numerous conical papillae with about 9-18 U-shaped ridges; 2. isolated, broader, more oval to globular papillae with about 6-12 U-shaped ridges (figs. 130b, 131). Aileron rod-like (fig. 130c). All parapodia uniramous (fig. 130d-l). One slender triangular to digitiform prechaetal lobe; in posterior parapodia slightly slimmer. One short, rounded, sometimes blunt, postchaetal lobe. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus in anterior parapodia conical to oval, shorter than postchaetal lobe; in posterior or sometimes only in last parapodia elongated and more slender triangular to digitiform; in last parapodia longer than postchaetal lobe; situated near parapodial base. Branchiae absent.

Distribution: Sea around Japan, east coast of Australia, sea around New Zealand; intertidal (fig. 132)

Discussion: IZUKA (1912) reported that the prostomium of *Hemipodus yenourensis* is 15-ringed and that the four appendages are indistinctly divided into 8 or 9 rings. The syntypes are badly preserved, but a few specimens have a 7 to 8-ringed prostomium, not articulated prostomial appendages and the typical conical proboscidial papillae with about 9-18 ridges.

The description and drawings of *Hemipodus australiensis* KNOX & CAMERON 1971 predominantly agree with the type material and seems to be identical to *Hemipodia yenourensis*.

HARTMAN (1959) considered *Hemipodus simplex*, described by MCINTOSH (1905) as *Hemipodus simplex* var.

GRUBE, to be a valid species, since she did not believe that MCINTOSH's *Hemipodus simplex* was identical to GRUBE's *Hemipodus simplex*. The description, drawings and the material (BMNH 1921.5.1.2241) show that the specimen is the same as *Hemipodia yenourensis*.

Hemipodia californiensis (HARTMAN 1938)
Figs. 133-135

1938 *Hemipodus californiensis* HARTMAN: 93, figs. 2-7 [Locus typicus: Morro Bay, California (U.S.A.); holotype: USNM 20361]

1960a *Hemipodus triannulatus* HARTMANN-SCHRÖDER: 13, figs. 24-28 [Locus typicus: "La Ventanilla" bei Lima (Peru); holotype (only mf+pf): HZM P-15265]

1962b *Hemipodus pectinans* HARTMANN-SCHRÖDER: 130; pl. 12, figs. 69-71 [Locus typicus: Chimbote, Peru; holotype: HZM P-14330]

1974 *Hemipodus olivieri* ORENSANZ & GIANUCA: 11, figs. 5, 8-9 [Locus typicus: Praias da Província de Buenos Aires, Argentina, campanha "almeja amarilla" St. 25; holotype: MACNBR 34193]

Material examined:
Type material: *Hemipodus californiensis*: California, San Luis Obispo County, Morro Bay, VI.1933, intertidal, sandy mud flat; holotype: cs/238/215/4.0/3.2 (USNM 20361) - 2 paratypes: cs/226/204/4.0/2.9; cs/149/152/4.2/3.0 (LACM-AHF Poly 768 partim) — *Hemipodus triannulatus*: Peru, La Ventanilla near Lima, 20.3.51, sandy shore, fine sand; holotype: mf+pf (without prostomium)/78(8+70)/172(20+152)/3.0/2.4 (HZM P-15265) — *Hemipodus pectinans*: Peru, Chimbote, 25.4.56, sandy shore, middle sand; holotype: cs/17/87/0.5/0.4 (HZM P-14330) - 3 paratypes: cs/82/165/3.4/2.5; cs/42/138/1.7/1.2; cs/25/115/0.9/0.6 (HZM P-14331) — *Hemipodus olivieri*: Argentina, Praias da Província de Buenos Aires, Faro Querandi, "Almeja Amarilla" Cruise St. 25; holotype: cs/115/195/5.0/4.0 (MACNBR 34193) - 4 paratypes: cs/78/175/3.0/2.3; cs/71/165/2.1/1.7; cs/54/163/2.7/2.0; af/22/40/4.3/3.0 (MACNBR 34194) - 3 paratypes: cs/91/187/4.5/4.0; cs/66/161/2.4/2.0; cs/45/139/1.8/1.4 (BMNH 1999.1004-1006) - 3 paratypes: cs/101/193/4.3/3.8; cs/82/180/3.2/2.6; cs/53/153/2.3/1.9 (SMF 9178) - 3 paratypes: cs/92/193/4.2/3.7; cs/60/161/2.8/2.1; af/39/107/1.9/1.5 (USNM 186551)

Additional material: NE Pacific: U.S.A., California, Santa Cruz Island; cs/114/148/4.2/3.0 (USNM 35985 partim) - Mexico, Baja California, Ensenada, 3.VI.1956; cs/51/125/1.9/1.6 (USNM 35979) — E Pacific: Mexico, Santiago Bay, 19°07'N 104°23'W, 26.VII.1972; cs/26/135/1.0/0.7; cs/20/118/0.9/0.6; cs/15/95/0.5/0.4; cs/14/98/0.4/0.3; cs/10/79/0.4/0.3 (USNM 79906) - El Salvador, Las Salinas de Acachapa, 13.II.1953, 10 m; cs/40/146/1.3/1.0; cs/14/101/0.8/0.6 (SMF 2725) - Amate Campo, 17.-19.II.1953, 15 m; cs/49/127/1.2/0.9; cs/44/126/1.2/1.0; cs/42/122/1.1/0.9; cs/36/127/1.2/1.0; cs/24/95/1.0/0.8; cs/14/92/0.7/0.6; af/27/81/1.0/0.8; af/23/84/0.9/0.7; af/17/60/1.0/0.9 (SMF 2710) - Amate Campo, 17.-19.II.1953, 25 m; cs/78/200/1.6/1.2; cs/17/90/0.5/0.4 (SMF 2716) - La Libertad, 1.XI.1952, 20 m; af/75/98/3.0/2.2 (SMF 2721) - San Diego, 2.II.1953, 40 m; cs/30/133/1.0/0.8; cs/21/125/0.8/0.6 (SMF 2692) - Las Hojas, 28.XI.1952, 7 m; cs/19/93/0.6/0.5 (SMF 2719) - Los Blancos, 17.X.1952, 38 m; cs/28/128/1.0/0.8 (SMF 2693) - Los Blancos, 17.X.1952, 17 m; af/25/100/0.9/0.8; af/15/66/0.9/0.8 (SMF 2707) - Los Blancos, 17.X.1952, 31 m; cs/24/104/0.7/0.6 (SMF 2711) - Los Blancos, 17.X.1952, 24 m; af/10/48/1.0/0.8 (SMF 2712) - San Juan del Gozo, Coral de Mulas, 17.XII.1952, 100 m; af/13/53/1.0/0.8 (SMF 2699) - Coral de Mulas, 17.XII.1952, 40 m; cs/27/112/1.0/0.8; af/12/62/0.7/0.6 (SMF 2701) - Coral de Mulas, 17.XII.1952, 40 m; cs/27/115/0.9/0.8; cs/14/88/0.6/0.5; af/10/48/1.0/0.9 (SMF 2722) - Costa Rica, Playa Matapalo, 16.V.1996, middle eulittoral; af/20/54/1.8/1.4 (SMF 9679) - Playa Matapalo, 16.V.1996, middle eulittoral; af/12/40/0.9/0.7 (SMF 9680) - Playa Matapalo, 16.V.1996, middle eulittoral; af/13/45/0.9/0.7 (SMF 9681) - Playa Matapalo, 16.V.1996, middle eulittoral; af/16/55/1.0/0.7 (SMF 9682) - Playa Flamingo, 29.IX.1997, littoral; cs/44/146/1.3/1.1; cs/35/130/1.2/1.0; cs/34/127/0.9/0.7; cs/34/120/1.1/0.8; cs/33/129/1.2/1.0; cs/33/128/1.1/0.8; cs/29/113/1.1/0.8; cs/29/109/1.2/1.0; cs/28/115/1.1/0.8; cs/27/115/1.0/0.8; cs/25/105/1.0/0.7; af/26/95/1.0/0.8; af/11/43/1.2/1.0 (SMF 9683) - Playa Zancudo, 11.V.1996, middle eulittoral; af/8/45/1.0/0.7 (SMF 9684)

Diagnosis: Proboscidial papillae mainly digitiform with about 9-40 ridges; ailerons rod-like; anterior segments of adult specimens with more or less distinct tubercles on dorsal side; parapodia of mid-body with relatively wide and more or less triangular prechaetal lobes without small digitate distal process; one short, more or less rounded postchaetal lobe; branchiae absent; ventral cirri conical to oval.

Description: Body up to 238 mm long with up to 215 segments. Anterior segments biannulate, anterior annulus longer than posterior one; mid-body segments more or less distinctly triannulate, two anterior annuli of about same length, posterior annulus slightly longer; median region (about 33rd to 70th segment) dorsally with up to 6 more or less distinct tubercles on each side. Conical prostomium consisting of about 8-10 rings (fig. 133a). Proboscis with two types of papillae: 1. numerous digitiform papillae with about 9-40 U-shaped ridges; 2. isolated, shorter, slightly broader, more oval to globular papillae with about 7-15 U-shaped ridges (figs. 133b, 134). Aileron rod-like (fig. 133c). All parapodia uniramous (fig. 133d-l). One prechaetal lobe; in anterior parapodia conical; in mid-body slightly wider and triangular; in posterior parapodia slender and more digitiform. One short, rounded, sometimes slightly blunt triangular postchaetal lobe. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus conical to oval, shorter than postchaetal lobe; situated near parapodial base. Branchiae absent.

Remarks: The tubercles can only be distinctly recognized on the larger specimens. On some of the preserved material whitish pigment fields are present under the integument of the tubercle zone (e.g. type material of *Hemipodia californiensis* and *Hemipodia olivieri*).

Distribution: West coasts of America from California to Peru, southeastern coasts of South America; intertidal to 100 m (fig. 135)

Discussion: The description and drawings of *Hemipodus californiensis* HARTMAN 1938 are not very detailed, but mainly correspond with the type material.

The type specimens of *Hemipodus triannulatus* HARTMANN-SCHRÖDER 1960, *Hemipodus pectinans* HARTMANN-SCHRÖDER 1962 and *Hemipodus olivieri* ORENSANZ & GIANUCA 1974 have been examined and are believed to be identical to *Hemipodia californiensis*.

Hemipodia pustatula (FRIEDRICH 1956)
Figs. 136-138

1956 *Hemipodus pustatulus* FRIEDRICH: 61, fig. 4a-c [Locus typicus: Metalìo, El Salvador; lectotype (hic): SMF 2706]

1959 *Hemipodus ciliatus* HARTMANN-SCHRÖDER: 150, figs. 128-131 [Locus typicus: El Zapote (El Salvador); holotype: HZM P-14324]

1965 *Hemipodus longipapillatus* HARTMANN-SCHRÖDER: 150, figs. 118-121 [Locus typicus: Bahia San Vicente vor der Mündung der Lenga, Chile; holotype: HZM P-14327]

Material examined:

Type material: *Hemipodus pustatulus*: El Salvador, Metalìo, 29.I.1953, 90 m; lectotype: cs(af+2mf+pf)/46(18+1+1+26)/137(57+1+2+77)/2.6/2.0 (SMF 2706) - El Salvador, San Juan del Gozo, Coral de Mulas, 17.XII.1952, 60 m; paralectotype: cs(af+pf)/37(21+16)/138(74+64)/1.4/1.0 (SMF 2697) - El Salvador, Los Blancos, 17.X.1952, 52 m; paralectotype: af+mf/20(17+3)/66(59+7)/2.3/1.8 (SMF 2703) — *Hemipodus ciliatus*: El Salvador, El Zapote, surf beach; holotype: cs(af+pf)/8.5(7.5+1)/50(44+6)/0.4/0.3 (HZM P-14324) - 2 paratypes: af/7.5/40/0.4/0.2; af/4.2/27/0.3/0.15 (HZM P-14325) — *Hemipodus longipapillatus*: Chile, Bahia San Vicente in front of Lenga River mouth, 3.5.60, 6 m, middle to fine sand; holotype: af/35/83/1.6/1.1 (HZM P-14327) - 4 paratypes: af/31/68/2.0/1.5; af/27/59/1.9/1.3; af/16/44/1.5/0.9; af/60/122/1.9/1.3 (HZM P-14328)

Additional material: Caribbean Sea: Costa Rica, Carretera, 1996, littoral; cs/25/118/1.5/1.2 (SMF 9731) - Cahuita, 5.IV.1996, littoral; cs/47/129/1.8/1.4; cs/30/108/0.9/0.6; af/30/62/1.4/1.1; af/18/47/1.2/0.8 (SMF 9685) - Cahuita, 5.IV.1996, lower eulittoral; af/9.5/36/2.0/1.5 (SMF 9686) - Cahuita, 5.IV.1996, lower eulittoral; af/22/58/1.8/1.3 (SMF 9687) - Cahuita, 5.IV.1996, lower eulittoral; af/16/48/1.8/1.4 (SMF 9688) - Cahuita, 5.IV.1996, lower eulittoral; af/10/29/1.3/1.0 (SMF 9689) - Cahuita, 5.IV.1996, lower eulittoral; af/5/29/1.1/0.8 (SMF 9690) - Cahuita, 1996, littoral; cs/32/127/1.0/0.7; af/52/110/1.7/1.2; af/41/90/1.0/0.7 (SMF 9691) - Puerto Vargas, 15.III.1996, lower eulittoral; af/13/41/1.4/1.0 (SMF 9692) - Puerto Vargas, 15.III.1996, lower eulittoral; af/11/39/1.4/1.1 (SMF 9693) - Puerto Vargas, 15.III.1996, lower eulittoral; af/16/39/1.2/0.8 (SMF 9694) - Puerto Vargas, 15.III.1996, lower eulittoral; af/21/60/1.4/1.0 (SMF 9695) - Puerto Vargas, 15.III.1996, lower eulittoral; af/22/63/1.4/1.1 (SMF 9696) - Puerto Vargas, 21.XI.1996, littoral; cs/22/110/1.0/0.7; af/42/126/1.6/1.2; af/17/58/1.8/1.4; af/9/31/1.4/1.0; af/5.7/20/1.1/0.7 (SMF 9697) - Puerto Vargas, 25.II.1997, littoral; cs/36/130/1.2/0.8; cs/19/105/0.8/0.6; af/23/54/1.5/1.1 (SMF 9698) - Puerto Vargas, 16.IX.1997, littoral; af/4.4/18/1.3/0.9 (SMF 9699) - Manzanillo, 24.II.1997, littoral; af/33/63/1.3/1.0; af/27/64/1.3/1.0 (SMF 9700) - Gandoca, 4.IV.1996, lower eulittoral; af/9.5/32/1.1/0.8 (SMF 9701) - Gandoca, 4.IV.1996, lower eulittoral; af/12/45/1.4/1.0 (SMF 9702) - Gandoca, 4.IV.1996, lower eulittoral; af/12/35/1.2/0.8 (SMF 9703) - Gandoca, 4.IV.1996, lower eulittoral; af/19/54/1.1/0.7 (SMF 9704) - Gandoca, 4.IV.1996, lower eulittoral; af/11/38/1.0/0.7 (SMF 9705) - Gandoca, 4.IV.1996, lower eulittoral; af/21/49/1.3/1.0 (SMF 9706) - Gandoca, 4.IV.1996, lower eulittoral; af/11.5/36/1.1/0.7 (SMF 9707) - Gandoca, 4.IV.1996, lower eulittoral; af/16/49/1.6/1.0 (SMF 9708) - Panama, Playa Langosta, 7.XII.1996, littoral; cs/28/116/1.4/1.0 (SMF 9709) - Playa Langosta, 7.XII.1996, littoral; cs/40/129/1.3/1.0; cs/32/123/1.3/1.0; cs/31/113/1.4/1.1; cs/30/119/1.0/0.7; cs/27/108/1.2/0.8; af/32/103/1.2/0.8; af/32/98/1.6/1.2; af/26/85/1.4/1.0; af/19/61/1.2/0.8; af/15/51/1.2/0.8 (SMF 9710) — SW Atlantic: Brazil, Paranaguá Bay, Buoy 10, St. 8, 25°34.18'S 48°19.42'W, 28.V.1982, 18 m; cs/42/89/1.5/1.0 (SMF 9711) - Paranaguá Bay, mouth of Maciel River, 11.VIII.1998, 12 m; cs/31/106/1.4/1.0; cs/29/110/1.4/1.0; cs/25/94/1.4/1.0; cs/17/82/0.8/0.5; cs/15/101/0.9/0.6; af/29/97/2.0/1.3; af/29/88/2.0/1.3; af/22/105/1.3/0.9; af/20/80/1.5/1.1; af/16/64/1.2/0.8; af/10/44/1.4/1.0; af/9/47/1.0/0.7 (SMF 9712) — NE Pacific: Mexico, Bahia Kino, 28°50'N 111°58'W, 9.VIII.1972; af/17/56/1.3/1.0 (USNM 79918 partim) — E Pacific: Mexico, Mazatlán, 23°11'N 106°26'W, 1.VIII.1972; af/9/53/1.0/0.6 (USNM 79909) - Mazatlán, 10.II.1953, mid-tide level, sand; cs/49/153/2.1/1.4 (USNM Acc. No. 205678) - El Salvador, Metalìo, 29.I.1953, 120 m; cs/38/152/1.7/1.2 (SMF 2696) - Acajutla, 3.XI.1952, 30 m; cs/51/116/2.1/1.7 (SMF 2724) - Amate Campo, 17.-19.II.1953, 35 m; cs/35/142/1.3/1.0; af/21/89/0.8/0.6 (SMF 2695) - La Libertad, 1.XI.1952, 50 m; af/31/102/1.6/1.1 (SMF 2723) - Toluca, 10.XII.1952, 20 m; cs/24/121/1.0/0.8 (SMF 2709) - Toluca, 10.XII.1952, 40 m; cs/46/153/1.5/1.1 (SMF 2713) - La Chepona, 11.IV.1953, 30 m; cs/58/156/2.1/1.8 (SMF 2694) - La Chepona, 11.IV.1953, 65 m; cs/44/150/1.5/1.2 (SMF 2698) - El Cuco, 6.III.1953, 100 m; cs/109/179/2.2/1.7 (SMF 2702) - 4 km E of El Cuco, 6.III.1953, 150 m; af/43/116/1.4/1.0 (SMF 2704) - El Cuco, 6.III.1953, 80 m; cs/45/154/1.6/1.3 (SMF 2718) - Costa Rica, Playa Matapalo, 16.V.1996, middle eulittoral; af/16/46/2.2/1.8 (SMF 9713) - Guiones, 26.II.1996, lower eulittoral; af/24/80/0.9/0.6 (SMF 9714) - Guiones, 26.II.1996, lower eulittoral; af/32/81/1.1/0.7 (SMF 9715) - Guiones, 24.III.1996, lower eulittoral; af/10/54/1.2/0.9 (SMF 9716) - Guiones, 25.III.1996, lower eulittoral; af/11/37/1.4/1.0 (SMF 9717) - Guiones, 25.III.1996, lower eulittoral; af/15/43/1.4/1.0; af/8/30/0.9/0.6 (SMF 9718) - Playa Sámara, 22.II.1996, lower eulittoral; af/6/20/1.2/0.9 (SMF 9719) - Playa Sámara, 10.XI.1996, littoral; cs/30/128/1.0/0.7; cs/20/108/0.6/0.4; af/12/48/0.9/0.7; af/12/45/0.8/0.7; af/6/35/0.8/0.6; af/5.3/25/1.3/0.9; af/4.7/31/0.7/0.5 (SMF 9720) - Playa Sámara, 1996, littoral; cs/72/148/1.4/1.0; cs/24/112/0.7/0.5; af/52/117/1.1/0.8; af/30/73/1.2/0.8; af/20/52/1.1/0.8; af/17/51/1.3/0.9 (SMF 9721) - Playa Carrillo, 27.X.1996, lower eulittoral; af/19/64/1.5/1.2 (SMF 9722) - Punta Islita, 10.II.1997, littoral; af/15/45/1.1/0.7 (SMF 9723) - Montezuma, 15.IV.1996, lower eulittoral; af/11/39/1.6/1.0 (SMF 9724) - Montezuma, 15.IV.1996, lower eulittoral; af/10/39/2.0/1.5 (SMF 9725) - Montezuma, 15.IV.1996, lower eulittoral; af/9/29/1.3/1.0 (SMF 9726) - Panama, Horconcitos, Playa Hermosa, 11.XII.1996, littoral; cs/29/110/1.7/1.4; cs/27/108/1.3/1.0; cs/19/105/1.0/0.8; cs/19/84/1.0/0.7; cs/18/100/0.9/0.6; cs/18/97/0.8/0.6; cs/17/99/1.0/0.7; cs/16.5/89/1.0/0.7; cs/16/90/1.2/0.9; cs/15/88/0.8/0.6; cs/13/90/0.8/0.6; af/31/115/1.6/1.1; af/21/78/1.7/1.3; af/15/87/1.0/0.7; af/12/80/1.0/0.7; af/12/64/1.3/1.1; af/11.5/71/0.8/0.5; af/10.5/59/0.9/0.6; af/10/53/1.0/0.7; af/9/53/0.9/0.6; af/9/48/1.0/0.7; af/7/43/0.9/0.6 (SMF 9727) - Playa Hermosa, 11.XII.1996, littoral; cs/29/111/1.7/1.5; af/14/82/1.2/1.0 (SMF 9728) - Punta Chame, 1996, littoral; af/44/133/2.2/1.8; af/19/92/1.2/0.9; af/8/49/1.2/0.8; af/4/27/0.9/0.7 (SMF 9729)

Diagnosis: Proboscidial papillae mainly digitiform with about 14-40 ridges; ailerons rod-like; anterior segments of adult specimens with distinct tubercles on dorsal side; parapodia of mid-body with slender triangular to digitiform prechaetal lobes with small digitate distal process; one short, more or less rounded postchaetal lobe; branchiae absent; ventral cirri in anterior parapodia first conical to oval, then more slender triangular to digitiform.

Description: Body up to 109 mm long with up to 179 segments. Anterior segments biannulate, anterior annulus longer than posterior one; mid-body segments more or less distinctly triannulate, two anterior annuli of about same length, posterior annulus slightly longer; median region (about 17th to 46th segment) dorsally with up to 4 (sometimes up to 6) more or less distinct tubercles on each side. Conical prostomium consisting of about 13-16 rings (fig. 136a). Proboscis with two types of papillae: 1. numerous digitiform papillae with about 14-40 U-shaped ridges, base of papillae with or without smooth, wing-like sides; 2. isolated, shorter, slightly broader, conical papillae with about 7-16 U-shaped ridges (figs. 136b, 137). Aileron rod-like (fig. 136c). All parapodia

uniramous (fig. 136d-l). One slender triangular to digitiform prechaetal lobe; from about 47th-102nd segment with small digitate distal process; in posterior parapodia prechaetal lobe slightly slimmer and elongated. One short, rounded, sometimes slightly blunt triangular postchaetal lobe. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus in anterior parapodia first conical to oval, from about 21st-48th segment more slender triangular to digitiform, shorter than postchaetal lobe; in posterior parapodia slender and elongated, some specimens with distinctly longer ventral cirri than postchaetal lobes in last parapodia; situated near parapodial base. Branchiae absent.

Remarks: In smaller specimens the tubercles are not clearly visible and the vental cirri are mostly oval instead of conical. In addition to the normal tubercles, some of the specimens carry much smaller tubercles (ca. 17.-28. segment) which are arranged around most of the whole segment. The ventral cirri of these specimens are always distinctly longer in the last parapodia. This is certainly not a fixation artefact, as supposed by FRIEDRICH (1956). It might be an indication of sexual dimorphism or be a step in the metamorphosis of an epitokous stage.

Distribution: West coasts of America from Mexico to Chile, southeastern coasts of South America, Caribbean Sea; intertidal to 150 m (fig. 138)

Discussion: The description and drawings of *Hemipodus pustatulus* FRIEDRICH 1956 predominantly agree with the type material. FRIEDRICH (1956) erroneously reported that the holotype is deposited under the SMF number 2687. A letter from H. FRIEDRICH explained that the herewith fixed lectotype (SMF 2706) and paralectotypes (SMF 2697, 2703) represent the type material.

The type specimens of *Hemipodus ciliatus* HARTMANN-SCHRÖDER 1959 and *Hemipodus longipapillatus* HARTMANN-SCHRÖDER 1965 have been examined and are referred to *Hemipodia pustatula*. The type material of *Hemipodus ciliatus* consists of juvenile stages. According to HARTMANN-SCHRÖDER (1959) the prostomium is not ringed, but the described lateral cilia (p. 150: "...sehr feine, haardünne Papillen, 13 übereinander...") show clearly that the prostomium consists of fifteen rings (see "Introduction – Anatomy – Sensory elements", p. 4).

Hemipodia armata (HARTMAN 1950)
Figs. 139-140

1950 *Hemipodus armatus* HARTMAN: 83; pl. 12, figs. 1-5 [Locus typicus: Petatlan Bay, western Mexico; holotype: LACM-AHF Poly 767]

Material examined:
Type material: *Hemipodus armatus*: R/V VELERO III St. 265-34, Mexico, Guerrero, Petatlan Bay, 17°31'45"N 101°27'34"W, 3.III.1934, 5-10 fms, hard sand and shell; holotype: af/38/71/2.2/1.3 (LACM-AHF Poly 767)

Diagnosis: Proboscidial papillae mainly digitiform with about 15-34 ridges; ailerons rod-like; anterior segments of adult specimens with distinct tubercles on dorsal side; parapodia of mid-body with slender triangular to digitiform prechaetal lobes, from anterior parapodia with small digitate distal process; one short, more or less rounded postchaetal lobe; branchiae absent; ventral cirri conical to oval.

Description: Body up to at least 38 mm long with up to at least 71 segments. Anterior segments biannulate, anterior annulus longer than posterior one; mid-body segments more or less distinctly triannulate, all annuli of about same length; median region (about 25th to 40th segment) dorsally with up to 4 more or less distinct tubercles on each side. Conical prostomium indistinctly ringed (fig. 139a). Proboscis with two types of papillae: 1. numerous digitiform papillae with about 15-34 U-shaped ridges, base of papillae with or without smooth, wing-like sides; 2. isolated, shorter, slightly broader, conical papillae with about 15-18 U-shaped ridges (fig. 139b). Aileron rod-like (fig. 139c). All parapodia uniramous (fig. 139d-l). One slender triangular to digitiform prechaetal lobe; from about 17th segment with small digitate distal process; in posterior parapodia prechaetal lobe slightly slimmer and elongated. One short, rounded, sometimes slightly blunt triangular postchaetal lobe. Dorsal cirrus from 3rd parapodium, conical to oval; inserted on body wall slightly above parapodial base. Ventral cirrus probably on the whole body conical to oval, shorter than postchaetal lobe; situated near parapodial base. Branchiae absent.

Distribution: Only known from the type locality in Mexico; 9.2-18.3 m (fig. 140)

Discussion: The description and drawings of *Hemipodus armatus* HARTMAN 1950 are based on a single, caudally incomplete specimen which is badly preserved. The main difference between *Hemipodia armata* and *Hemipodia pustatula* is the digitate distal process on the prechaetal lobes which begins from the anterior parapodia and not from the mid-body. This may be due to sexual dimorphism, since HARTMAN (1950) reported that the holotype is a female. If this is the case, the two species would be identical and *Hemipodia pustatula* would have to be referred to *Hemipodia armata*. Additional material of *Hemipodia armata* is needed to clarify the taxonomy.

Glyceridae incertae sedis and nomina nuda:

(The loci typici of the following species are presented in fig. 141)

Glycera alba var. *adspersa* FAUVEL 1939

1939 *Glycera alba* var. *adspersa* FAUVEL: 342 [Locus typicus: Récif de Caûda, Poulo Condore (Vietnam); holotype: ?, UCO Q. 58' slide with parapodia]

Material examined:
Type material: *Glycera alba* var. *adspersa*: Vietnam, Poulo Condore, Récif de Caûda, mud; 1 slide with 9 parapodia (UCO Q. 58')

Remarks: Parapodia with two slender triangular to digitiform prechaetal lobes of about same length; notopodial postchaetal lobe elongated and slender triangular, distinctly longer than rounded neuropodial lobe. Dorsal cirrus conical to oval. Ventral cirrus slender triangular to digitiform. Branchiae non-retractile, simple, digitiform; situated termino-dorsally on parapodia; slightly longer than prechaetal lobes.

Discussion: FAUVEL (1939) established *Glycera alba* var. *adspersa*, because of the special colouration of this taxon. A detailed description of the taxonomic features is not given. Most of the parapodia from the holotype are poorly preserved, but they indicate that this subspecies is a synonym of *Glycera alba*, *Glycera tridactyla* or *Glycera natalensis*. Exact classification is not possible, since the rest of the holotype appears to have been lost.

Glycera albicans QUATREFAGES 1850

1850 *Glycera albicans* QUATREFAGES: 358; pl. 9, fig. 4 [Locus typicus: no locality details, QUATREFAGES (1866): Boulogne (Boulogne-sur-Mer, France); type: lost]

1866 *Glycera albicans* – QUATREFAGES: 186 [Locus typicus: Boulogne (France); type: lost]

Discussion: QUATREFAGES (1850) originally described only the nervous system of *Glycera albicans*. The later description of the morphology was made on the basis of some illustrations, because the type material was lost (QUATREFAGES 1866). The structure of the branchiae suggests that this taxon might be identical to *Glycera alba* or *Glycera tridactyla*.

Glycera calbucoensis HARTMANN-SCHRÖDER 1962

1962a *Glycera calbucoensis* HARTMANN-SCHRÖDER: 111, figs. 104-108 [Locus typicus: Puerto Calbuco bei Puerto Montt, (Chile); holotype: HZM P-14316]

Material examined:
Type material: *Glycera calbucoensis*: Chile, Puerto Calbuco near Puerto Montt, 1.III.1960, sand with detritus between shore rubble; holotype: cs/4.3/24/0.9/0.65 (HZM P-14316)

Remarks: There are some differences between the description and the holotype of *Glycera calbucoensis* HARTMANN-SCHRÖDER 1962. The prostomial appendages are simple and not annulated; the segments of the midbody are only indistinctly triannulate; two partly developed postchaetal lobes are present and not only one lobe as described by HARTMANN-SCHRÖDER (1962a); the dorsal cirrus is not absent and is visible from the 3rd parapodia as a small swelling above the parapodial base.

Discussion: *Glycera calbucoensis* HARTMANN-SCHRÖDER 1962 has been examined and is considered unidentifiable since the description and drawings are not detailed and in addition are only based on a single juvenile specimen. However, the holotype clearly belongs to the genus *Glycera*, because the parapodia are biramous and both simple and compound chaetae are present.

Glycera carnea BLANCHARD 1849

1849 *Glycera carnea* BLANCHARD: 28; pl. 2, fig. 1a-b [Locus typicus: Chiloe (Chile); type: lost]

Discussion: *Glycera carnea* BLANCHARD 1849 is considered to be unidentifiable, since the description and drawings are not very detailed and the type material is no longer available.

Glycera corrugata BAIRD 1863

1863 *Glycera corrugata* BAIRD: 109 [Locus typicus: Esquimalt Harbour, Vancouver Island (Canada); type: presumed lost]

Discussion: *Glycera corrugata* BAIRD 1863 is considered to be unidentifiable, because the description and drawings are not very detailed and the type material has probably been lost.

Glycera dubia (BLAINVILLE 1825)

1825 *Nereis dubia* BLAINVILLE: 451; pl. 19, figs. 1, 1a, 1b (from BLAINVILLE 1816-1830) [Locus typicus: no locality details; type: presumed lost]

1828 *Glycera dubia* – BLAINVILLE: 484

Discussion: BLAINVILLE's (1825, 1828, 1816-1830) descriptions and drawings of *Nereis dubia* show only that this taxon belongs to the genus *Glycera*. An exact classification is impossible, since the type material cannot be located. (Note: the taxon is not shown in fig. 141, because the locus typicus is unknown.)

Glycera embranchiata KRISHNAMOORTHI 1963

1963 *Glycera embranchiata* KRISHNAMOORTHI: 97 [nomen nudum]

Discussion: The name *Glycera embranchiata* was first published by KRISHNAMOORTHI (1963) in an ecological paper on the polychaetes of the Adyar Estuar in Madras (HARTMAN 1974b). According to G. HARTMANN-SCHRÖDER (pers. com.) this nomen nudum can be traced back to an unpublished paper by RANGANATHAN (1942).

Glycera enigmatica AMOUREUX 1971

1971 *Glycera enigmatica* AMOUREUX: 153 ["Locus typicus": cote d'Arcachon, St. 39 (France); "type": presumed lost] nomen nudum

Discussion: *Glycera enigmatica* is a nomen nudum, since the original description of this species by AMOUREUX (1971, p. 153) consists of: "Cette espèce, nouvelle, sera décrite dans une note spéciale. Elle est représentée par trois fragments antérieurs de 12-14 mm... RULLIER, à qui nous l'avons présentée, nous a confirmé notre diagnostic: forme non encore décrite." Further, the taxon is considered to be unidentifiable, because the "type" specimens cannot be located.

Glycera koehleri ROULE 1896

1896 *Glycera Kœhleri* ROULE: 451; pl. 20, figs. 6-7; pl. 21, fig. 8; pl. 24, fig. 23; pl. 25, fig. 27 [Locus typicus: Station 5: Long. E. (W) 6°15'. – Lat. N. 45°47', Golfe de Gascogne (France); type: presumed lost]

Discussion: *Glycera koehleri* ROULE 1896 is considered to be unidentifiable, because the description and drawings are not very detailed and the type material has probably been lost. The reported degree of longitude, 6°15'E (ROULE 1896), seems to be a lapsus calami, because the locus typicus is in the Gulf of Gascogne.

Glycera kraussii STIMPSON 1856

1856 *Glycera Kraussii* STIMPSON: 392 [Locus typicus: Cape of Good Hope, at Simon's Bay (South Africa); type: presumed lost]

Discussion: *Glycera kraussii* STIMPSON 1856 is considered to be unidentifiable, because the description is not very detailed and the type material has probably been lost. However, STIMPSON (1856, p. 392) reported that the "...branchial tonguelet was retracted in the specimen examined."

Glycera lancadivae SCHMARDA 1861

1861 *Glycera Lancadivae* SCHMARDA: 95; textfigs. a-c, k [Locus typicus: Indischer Ozean, Ostküste von Ceylon; type: presumed lost]

Discussion: An exact classification of *Glycera lancadivae* SCHMARDA 1861 is impossible, because the description and drawings are not very detailed and the type material cannot be located. However, the shape of the parapodia and the proboscidial papillae suggest that this taxon might be identical to *Glycera tesselata* or *Glycera brevicirris*.

Glycera papillosa GRUBE 1857

1857 *Glycera papillosa* GRUBE: 176 [Locus typicus: Valparaiso (Chile); type: presumed lost]

Discussion: The description of GRUBE (1857) indicates that *Glycera papillosa* is a synonym for *Glycera lapidum* or *Glycera capitata*. Only these two species have triannulate segments, parapodia with two unequally long prechaetal lobes and one rounded postchaetal lobe whilst the branchiae are completely absent. Both species differ in the morphology of the proboscidial papillae, but these structures are not well described and the type material is thought to be lost (AUGENER 1922a).

Glycera polygona RISSO 1826

1826 *Glycera polygona* RISSO: 417 [Locus typicus: no locality details (?Mediterranean Sea); type: presumed lost]

Discussion: *Glycera polygona* RISSO 1826 is considered to be unidentifiable, because the description is not very detailed and the type material has probably been lost.

Glycera pusilla DELLE CHIAJE 1844

1844 *Glycera pusilla* DELLE CHIAJE: 33; pl. 177, figs. 1-4 [Locus typicus: no locality details (? Sicily, Italy); type: presumed lost]

Discussion: *Glycera pusilla* DELLE CHIAJE 1844 is considered to be unidentifiable, because the description and drawings are not very detailed and the type material has probably been lost.

Glycera septentrionalis (ROULE 1896)

1896 *Hemipodus septentrionalis* ROULE: 452; pl. 20, figs. 4-5; pl. 24, fig. 22 [Locus typicus: Station 5: Long. E. (W) 6°15'. – Lat. N. 45°47', Golfe de Gascogne (France); type: presumed lost]

Discussion: The description and drawings of *Hemipodus septentrionalis* ROULE 1896 show that this taxon belongs to the genus *Glycera* since the parapodia are biramous and both simple and compound chaetae are present. However, an exact classification is impossible since the type material cannot be located. The reported degree of longitude, 6°15'E (ROULE 1896), seems to be a lapsus calami, because the locus typicus is in the Gulf of Gascogne.

Glycera siphonostoma (DELLE CHIAJE 1822)

1822 *Lumbricus siphonostoma* DELLE CHIAJE: pl. 29, figs. 21-24 [Locus typicus: no locality details (? Naples, Italy); type: presumed lost]
1827 *Lumbricus siphonostoma* – DELLE CHIAJE: 428, 413 (description), 435 (legend)
1841 *Glycera syphonostoma* – DELLE CHIAJE: 84
1841 *Glycera syphostoma* – DELLE CHIAJE: 98 [lapsus calami for *Glycera syphonostoma*]

Discussion: The descriptions and drawings of DELLE CHIAJE (1822, 1827, 1841) for *Lumbricus siphonostoma* are not very detailed and the type material seems to be lost. For that reason the taxon is considered to be unidentifiable.

Glycera taurica CZERNIAVSKY 1881

1881 *Glycera taurica* CZERNIAVSKY: 383 [Locus typicus: Sinus Hursuficus (harbour of ? Gurzuf, Black Sea); type: presumed lost]

Discussion: The description of *Glycera taurica* CZERNIAVSKY 1881 shows that the taxon belongs to the genus *Glycera*, but no more specifications are possible, because the type material has probably been lost.

Glycera teres (DALYELL 1853)

1853 *Nereis teres* DALYELL: 144; pl. 20. figs. 1-2 [Locus typicus: Marine. Shore. (? Great Britain); type: presumed lost]

Discussion: JOHNSTON (1865) referred *Nereis teres* DALYELL 1853 and *Nereis sorex* from the LEACH collection to *Glycera capitata* (= *Glycera lapidum*, see p. 40). However, the description and drawings of *Nereis teres* DALYELL 1853 only show that this taxon probably belongs to the genus *Glycera*. An exact classification is not possible since the type material cannot be located.

Glycera verdescens CHAMBERLIN 1919

1919a *Glycera verdescens* CHAMBERLIN: 14 [Locus typicus: Laguna Beach, California (U.S.A.); type: presumed lost]

Discussion: *Glycera verdescens* CHAMBERLIN 1919 is considered to be unidentifiable, because the description is not very detailed and based only on a single juvenile specimen which has probably been lost.

Hemipodia ellesmerensis (KNOX 1960)

1960b *Hemipodus ellesmerensis* KNOX: 229, figs. 21-27 [Locus typicus: Lake Ellesmere, Canterbury, New Zealand; type: ? NZOI]

Discussion: The description and drawings of *Hemipodus ellesmerensis* KNOX 1960 suggested that this taxon might be identical to *Hemipodia simplex* or *Hemipodia yenourensis*. However, KNOX (1960b) reported that the proboscidial papillae showed no ridges, but they could have been overlooked. An exact classification is only possible after the examination of the type material, presumed now to be located in the NZOI.

Non Glyceridae:

Cirrhineris filigera (LESUEUR in BLAINVILLE 1825)

1825 *Nereis filigera* LESUEUR in BLAINVILLE: 453 [Locus typicus: côtes de l'Amérique; type: presumed lost]

1828 *Cirrhineris filigera* – BLAINVILLE: 488; pl. 21, figs. 1, 1a

Discussion: HARTMAN (1959) stated that *Proboscidea filigera* BLAINVILLE 1825 might belong to *Glycera*, whereas *Cirrhineris filigera* was referred to the Cirratulidae (HARTMAN 1959, p. 407: "A confused name. Established for *C. filigera* Lesson *in* Blainville 1818"). *Cirrhineris filigera* LESSON in BLAINVILLE 1818 is unambiguously a misquotation, because BLAINVILLE (1818) mentioned neither the species *Cirrhineris filigera* nor the name LESSON. *Nereis filigera* is a manuscript name of LESUEUR, who established the genus *Proboscidea* for this taxon. Both the manuscript name and illustrations were forwarded to BLAINVILLE, who published them in 1825 under the genus *Nereis* (p. 453: "2. Les appendices locomoteurs biramés. (Genre PROBOSCIDEA, Lesueur.) La N. FILIGÈRE; *N. filigera*, Lesueur, mscrt.") and then in 1828 under the genus *Cirrhineris* (p. 488: "Le C. FILIGÈRE: *C. filigera*, Les., Mss.; *N. filigera*, atlas de ce Dict., Chétopod."). Consequently both taxa are identical and all descriptions and drawings show clearly that this taxon belongs to the Cirratulidae.

Glycera viridescens STIMPSON 1854

1854 *Glycera viridescens* STIMPSON: 33 [Locus typicus: Grand Manan, Bay of Fundy, New Brunswick (Canada); type: presumed lost]

Discussion: The description of *Glycera viridescens* STIMPSON 1854 is rather vague. VERRILL (1881), who worked together with STIMPSON, believed that this name was a synonym for *Goniada maculata*.

Capitella capitata (O. FABRICIUS 1780)

1780 *Lumbricus capitatus* O. FABRICIUS: 279 [Locus Typicus: Groenl. Pulluteriak (Greenland); type: presumed lost]

Discussion: HARTMAN (1959) believed that *Lumbricus capitatus* O. FABRICIUS 1780 might be identical to *Glycera capitata*. O. FABRICIUS (1780) referred *Lumbricus littoralis minor* OLAFSEN 1772 to *Lumbricus capitatus* and HARTMAN (1951a) also suspected that *Lumbricus littoralis minor* was synonymous with *Capitella capitata*. The descriptions and illustrations of OLAFSEN (1772, 1774 and 1775) are not very detailed, but the description of O. FABRICIUS (1780) for *Lumbricus capitatus* suggests that this taxon belongs to the genus *Capitella* and not to *Glycera*.

Nephtys hirsuta (DALYELL 1853)

1853 *Nereis (Nephtys) hirsuta* DALYELL: 145; pl. 21, figs. 1-3 [Locus typicus: Zetland (Shetland Islands); type: presumed lost]

Discussion: JOHNSTON (1865) questionably referred *Nereis* (*Nephtys*) *hirsuta* DALYELL 1853 to *Glycera nigripes* (= *Glycera unicornis*, see p. 62). However, the description and drawings show that this taxon probably belongs to the genus *Nephtys*. An exact classification is impossible, because the type material cannot be located.

Drawings, SEM pictures and distribution maps

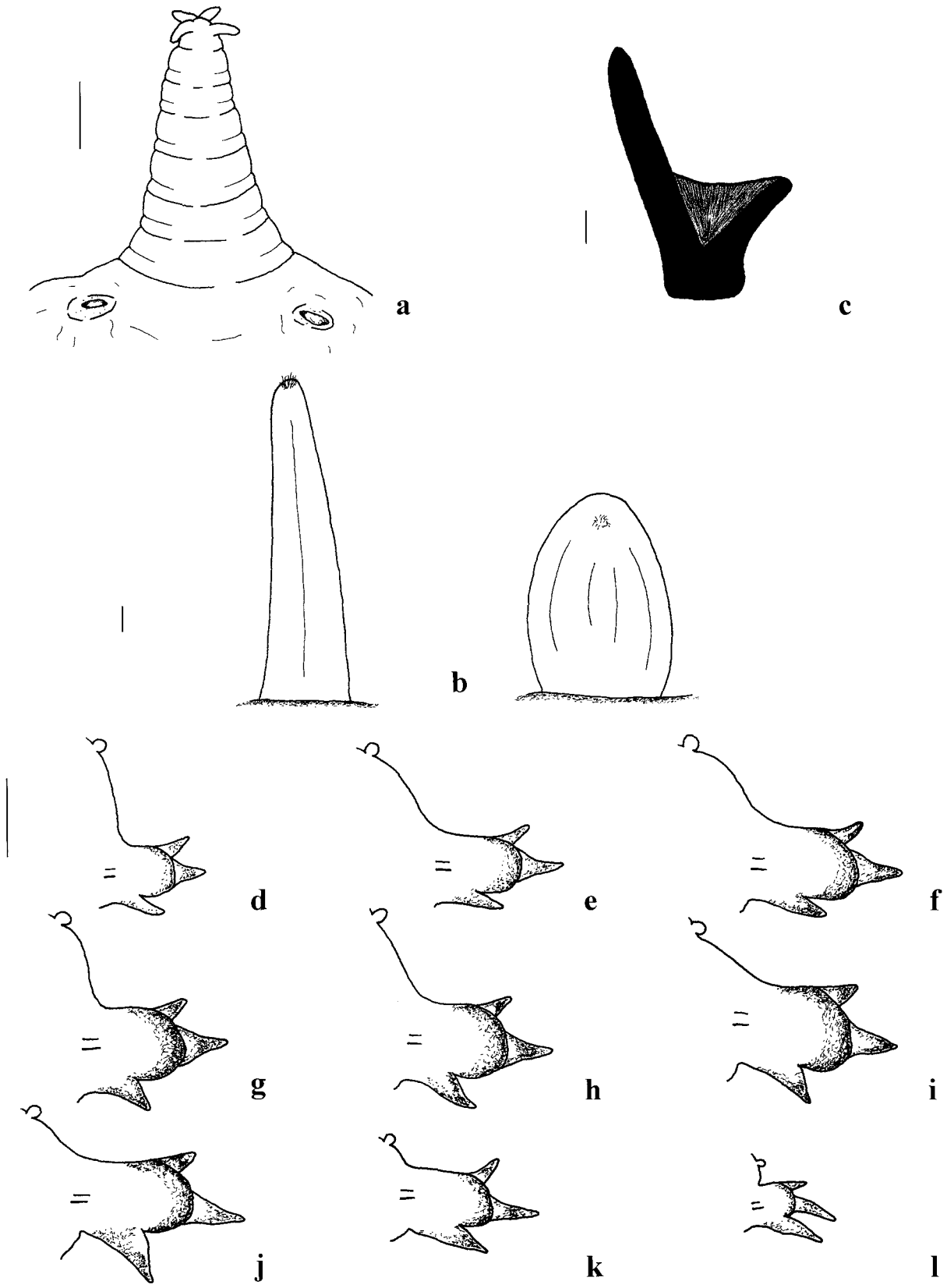

Fig. 16: *Glycera capitata* ØRSTED 1842. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: SMF 2173, b-l: MSU[1]; scale bars: a, d-l = 0.5 mm, b = 0.01 mm, c = 0.1 mm)

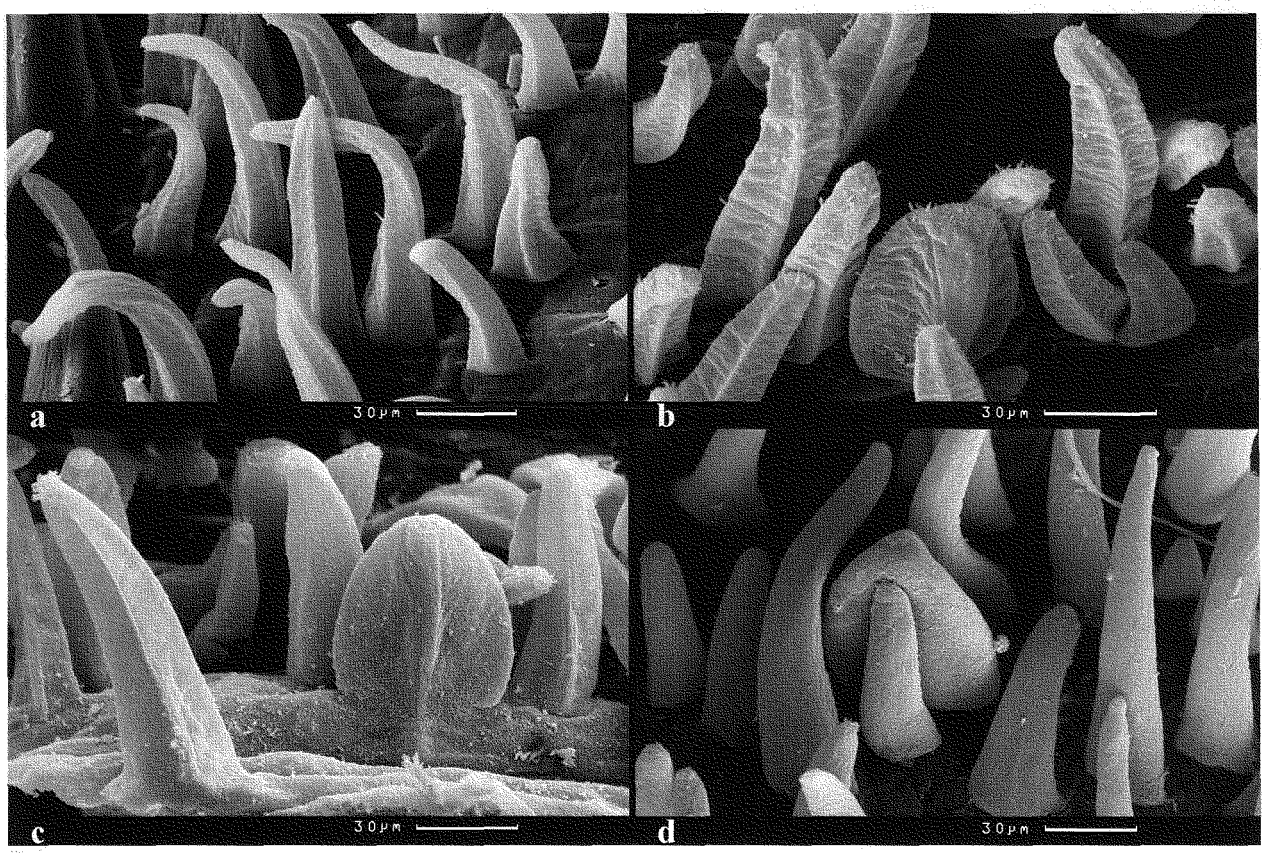

Fig. 17: *Glycera capitata* ØRSTED 1842. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: MSU[2], b: ZMB Q. 4309, c: BMNH 1930.10.8.1345-46, d: MSU[1])

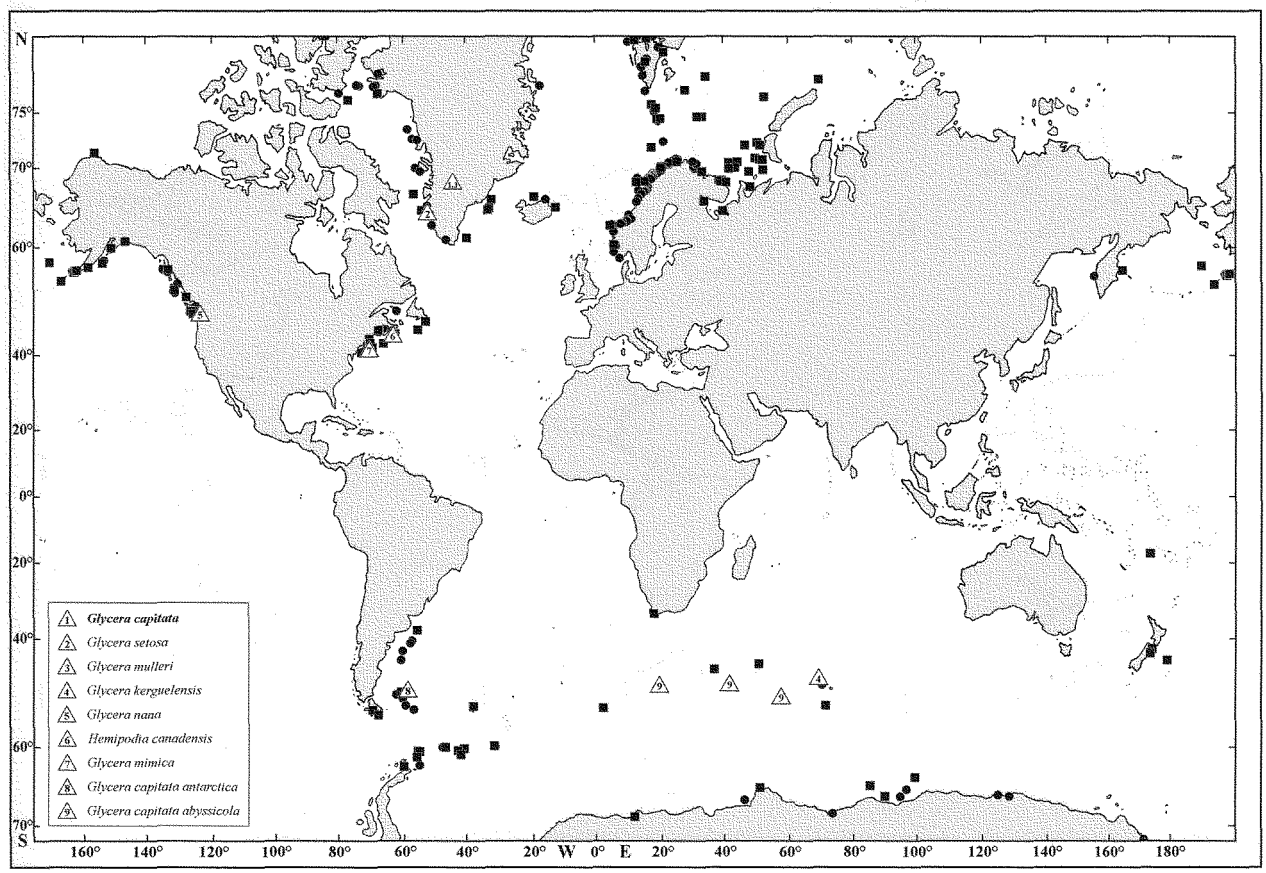

Fig. 18: Distribution of *Glycera capitata* ØRSTED 1842.

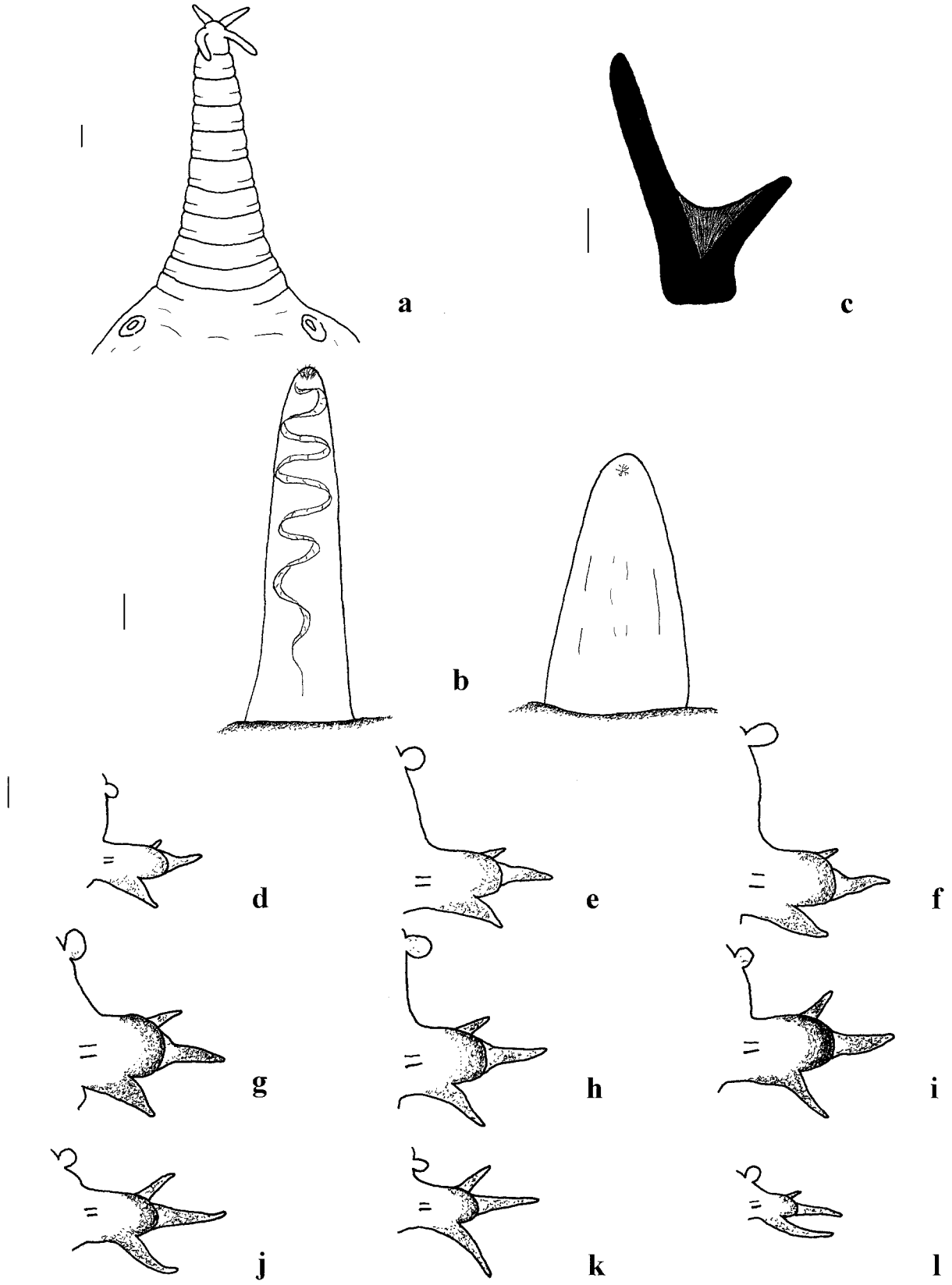

Fig. 19: *Glycera lapidum* QUATREFAGES 1866. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: HZM V-3846, b-l: SMF 8561; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

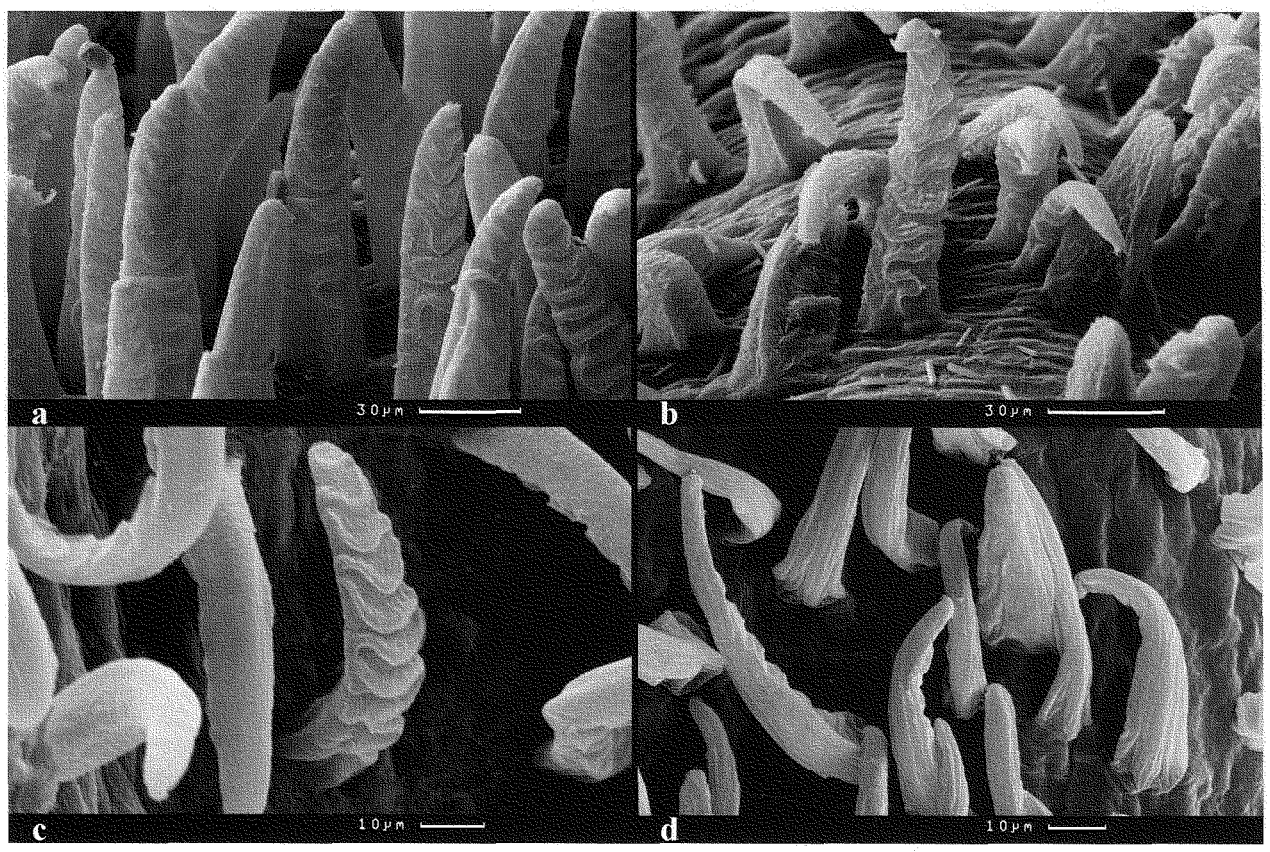

Fig. 20: *Glycera lapidum* QUATREFAGES 1866. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: SMF 9309, MSU[3], SMF 9310, MV F 80206)

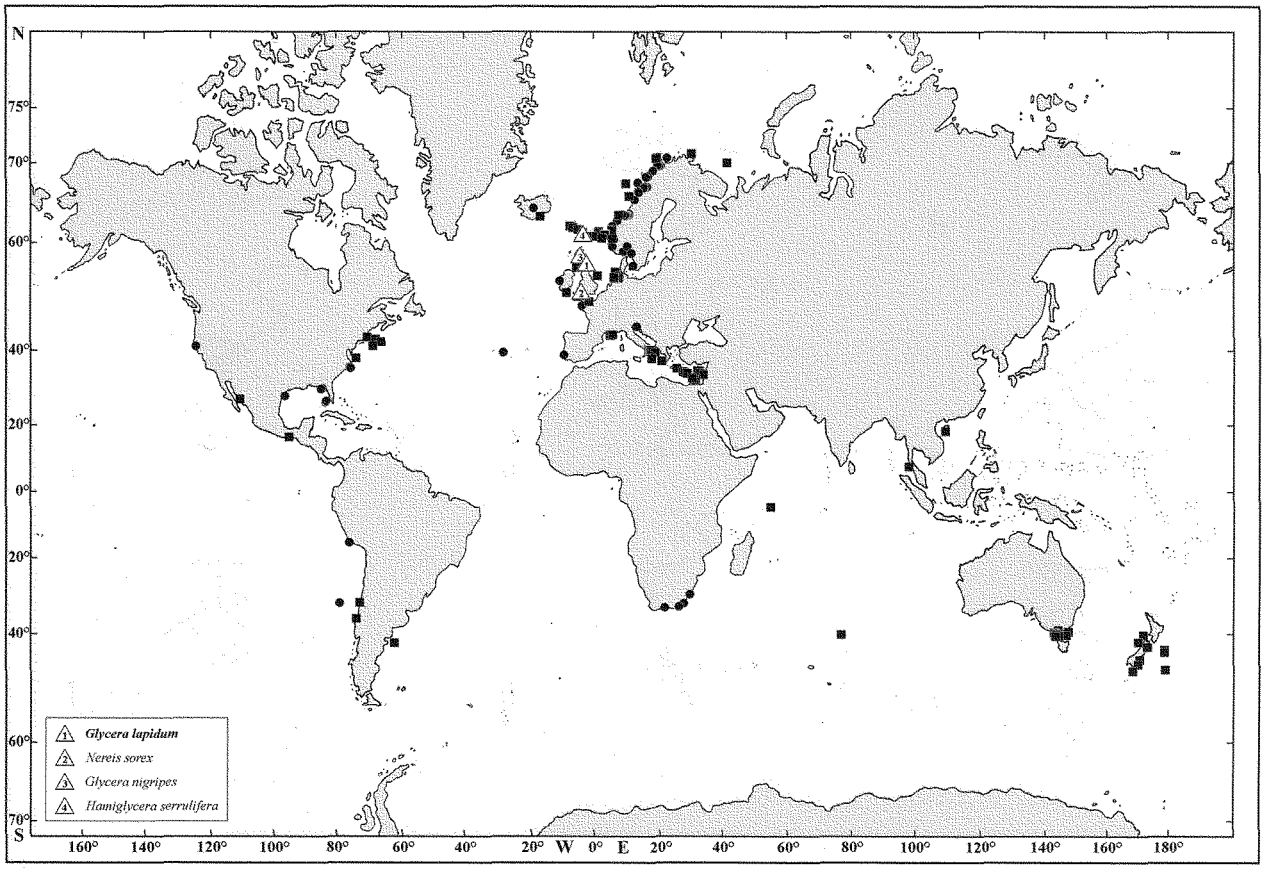

Fig. 21: Distribution of *Glycera lapidum* QUATREFAGES 1866.

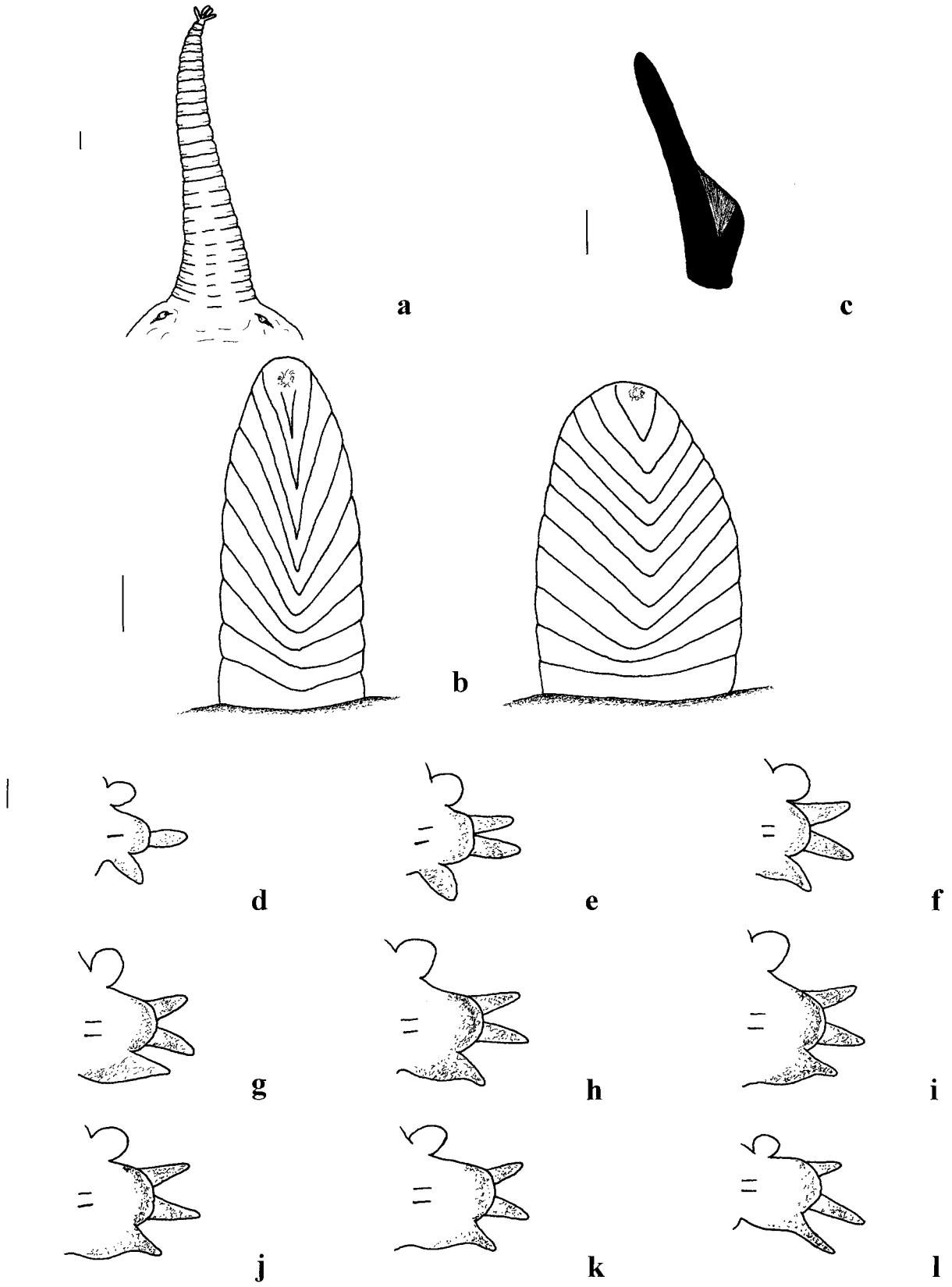

Fig. 22: *Glycera oxycephala* EHLERS 1887. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: SMF 9373; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

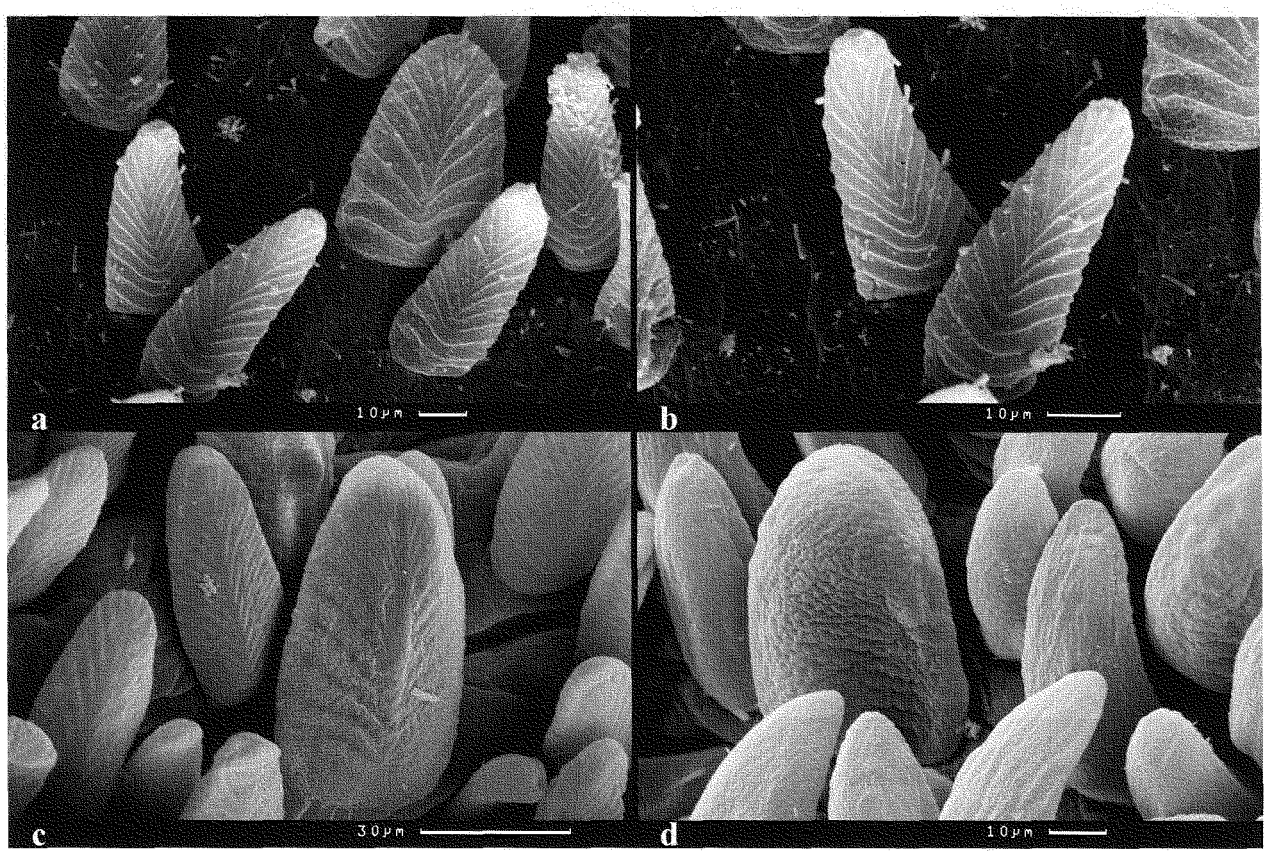

Fig. 23: *Glycera oxycephala* EHLERS 1887. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: SMF 9368, c-d: SAM A20468)

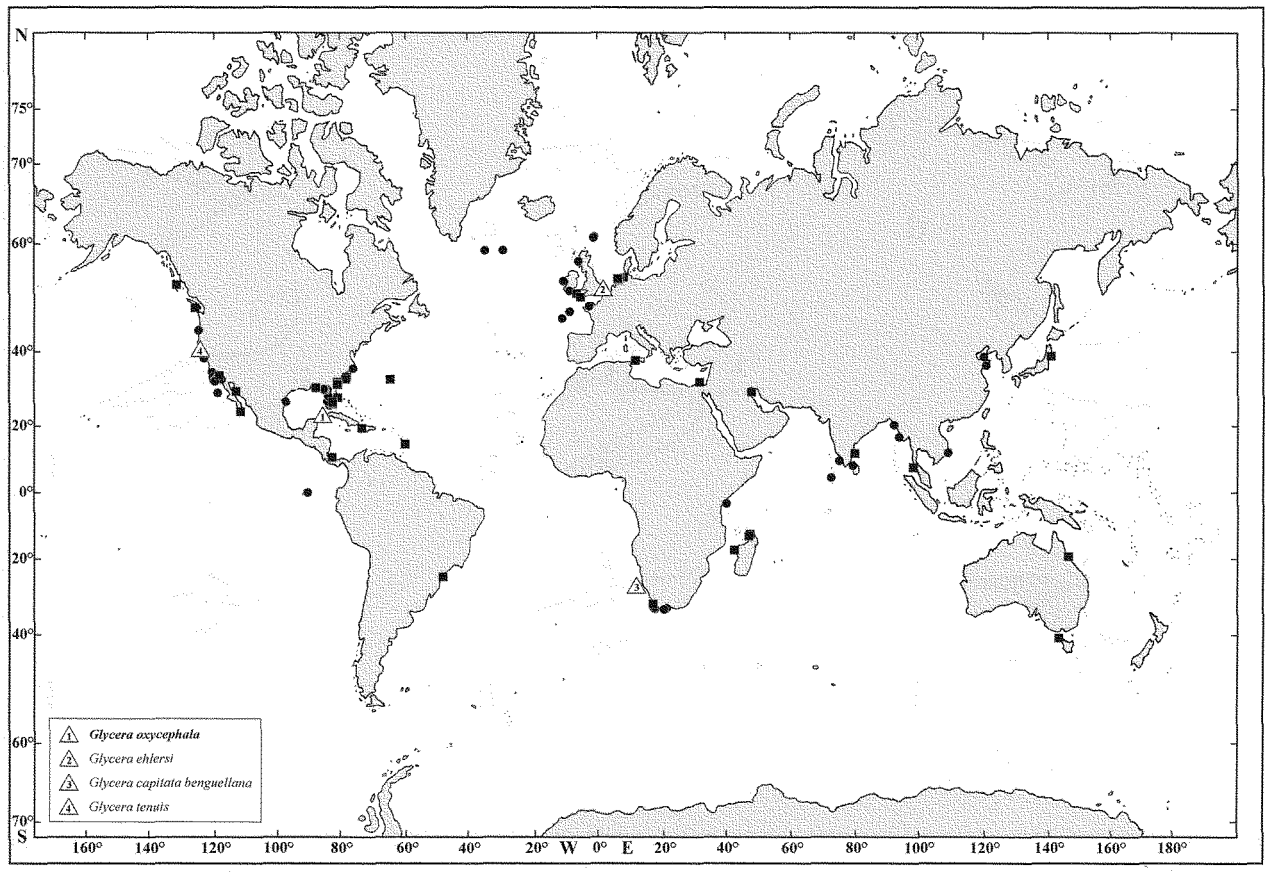

Fig. 24: Distribution of *Glycera oxycephala* EHLERS 1887.

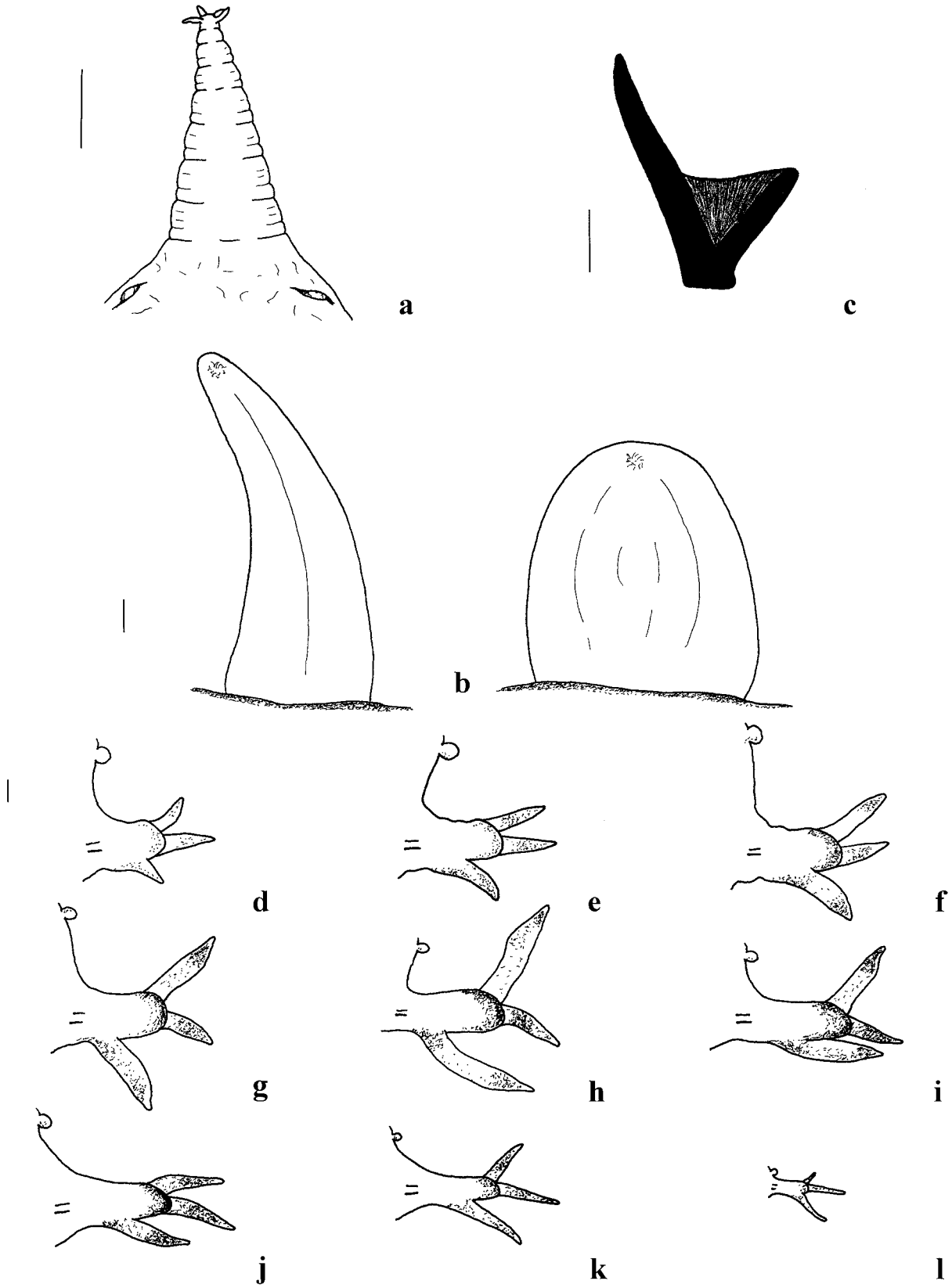

Fig. 25: *Glycera branchiopoda* MOORE 1911. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-b: USNM 16847, c-l: SMF 9389; scale bars: a = 0.5 mm, b = 0.01 mm, c-l = 0.1 mm)

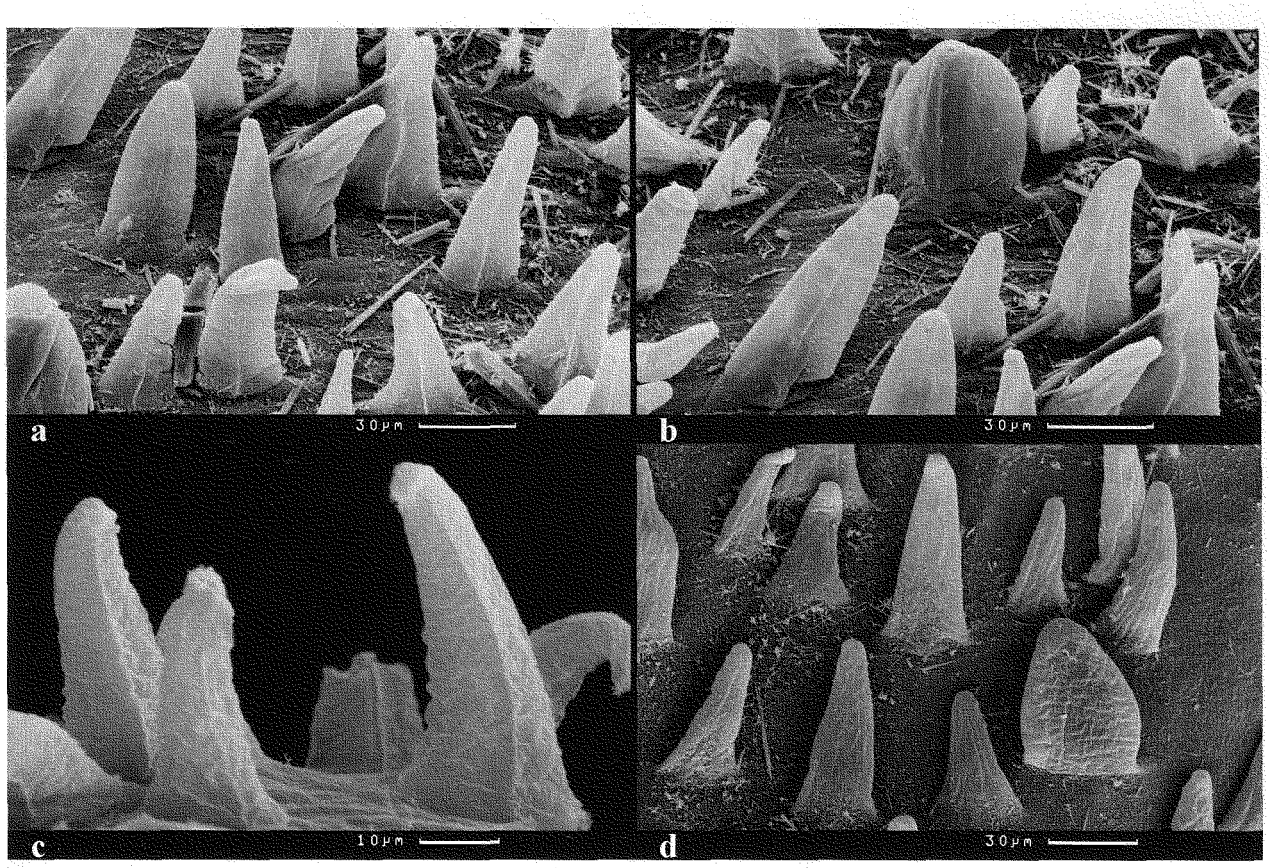

Fig. 26: *Glycera branchiopoda* MOORE 1911. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b, d: USNM 17304, c: SMF 9391)

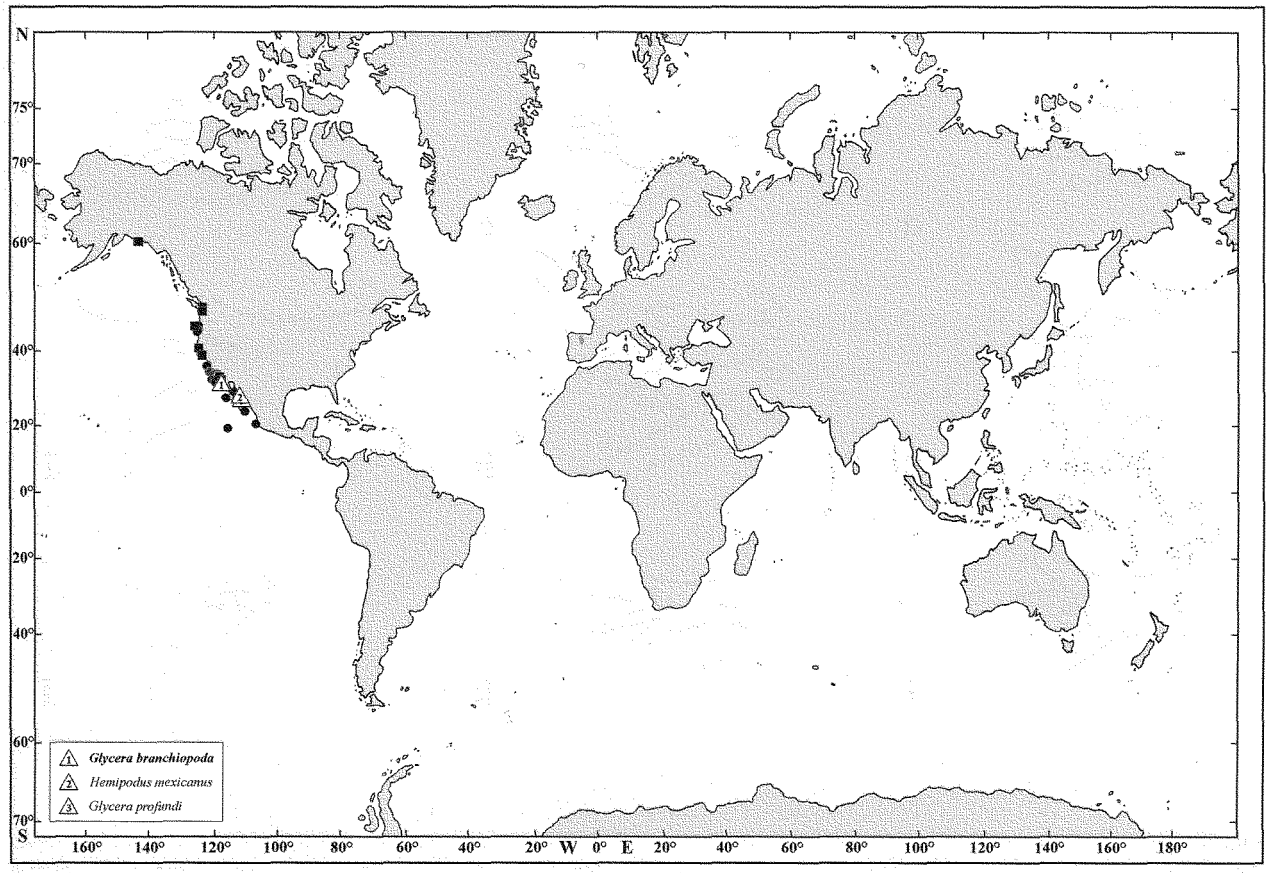

Fig. 27: Distribution of *Glycera branchiopoda* MOORE 1911.

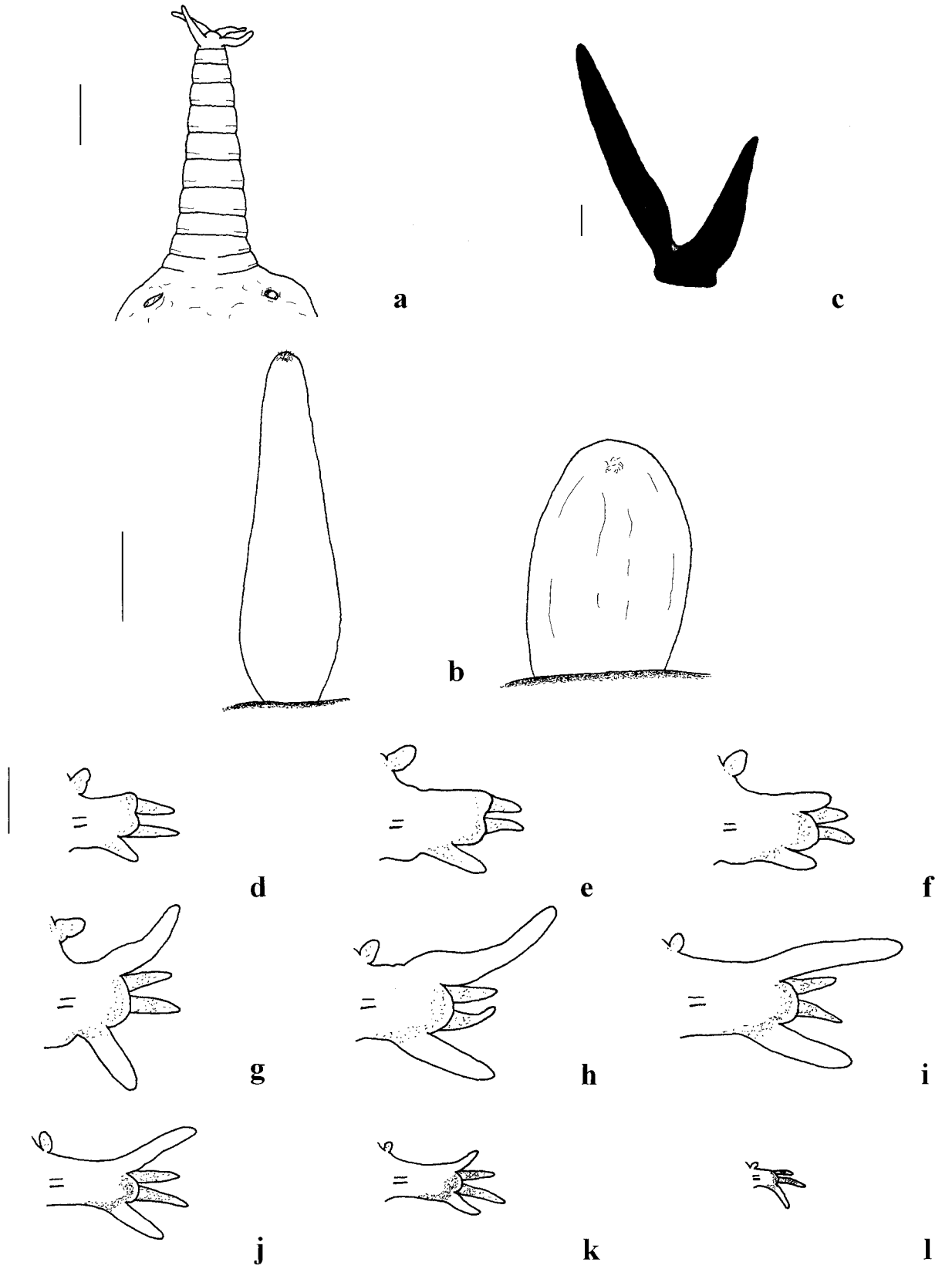

Fig. 28: *Glycera sphyrabrancha* SCHMARDA 1861. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: SAM A20470, b-l: USNM 20301; scale bars: a, d-l = 0.5 mm, b = 0.05 mm, c = 0.1 mm)

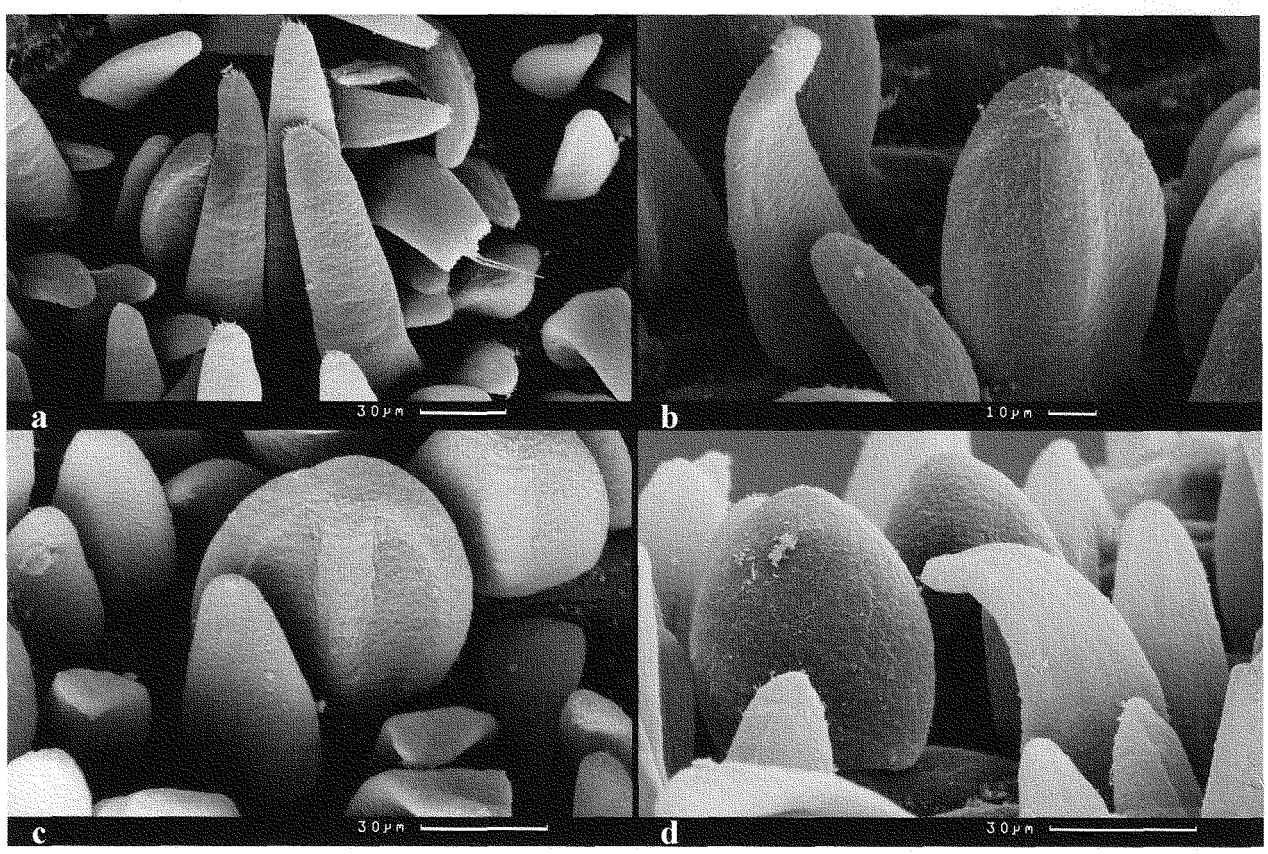

Fig. 29: *Glycera sphyrabrancha* SCHMARDA 1861. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: USNM Acc. No. 292580)

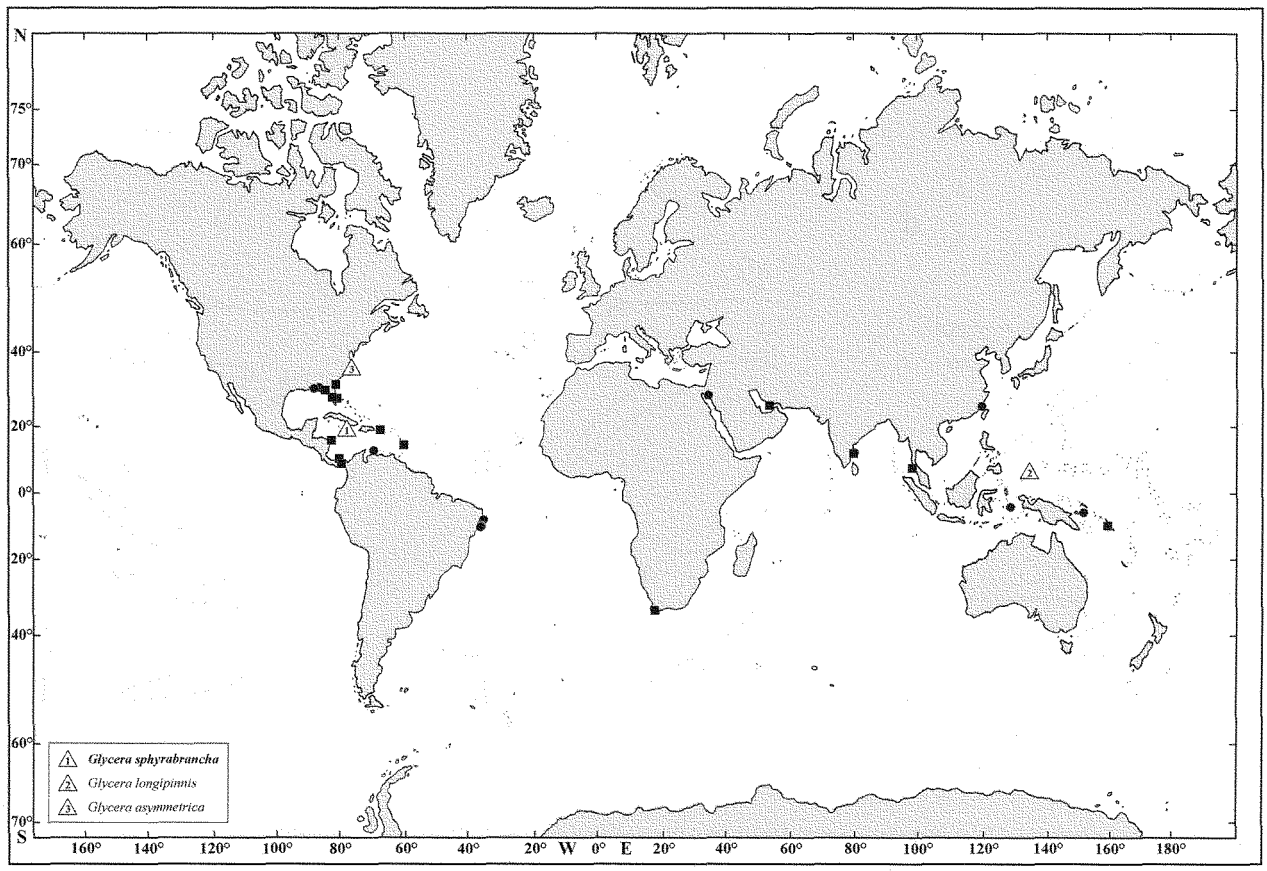

Fig. 30: Distribution of *Glycera sphyrabrancha* SCHMARDA 1861.

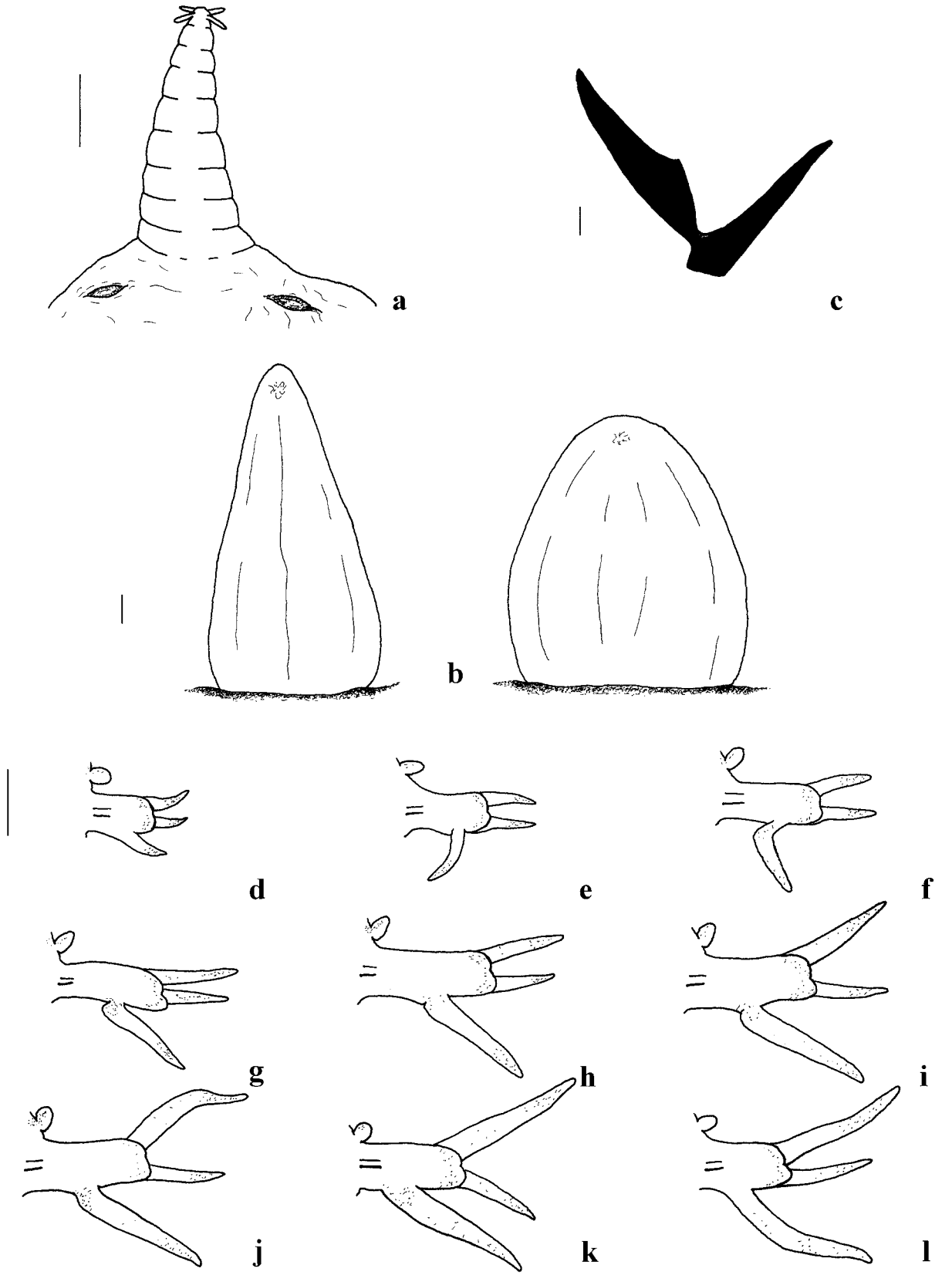

Fig. 31: *Glycera guatemalensis* BÖGGEMANN & FIEGE 2001. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to mid-body parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-b, d-l: USNM 35980, c: SMF 9392; scale bars: a, d-l = 0.5 mm, b = 0.01 mm, c = 0.1 mm)

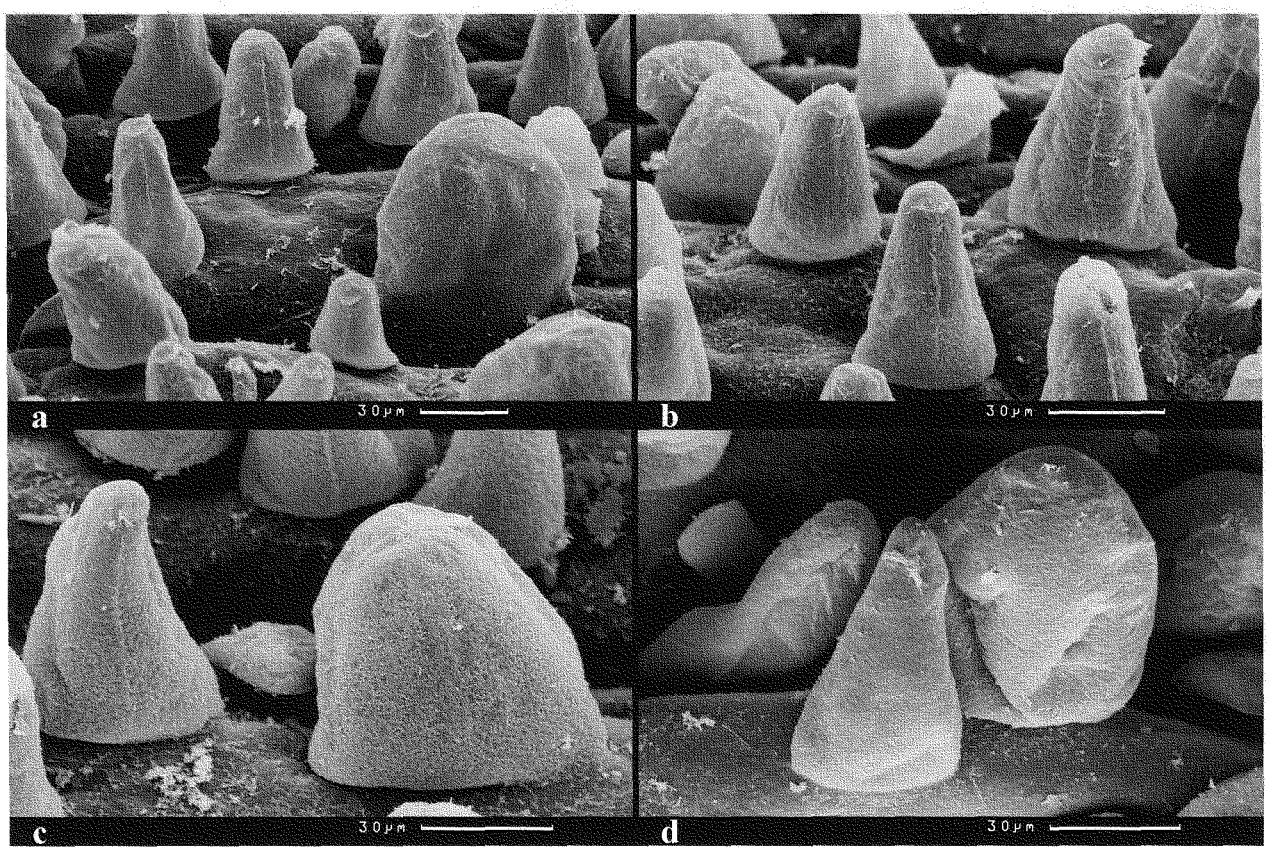

Fig. 32: *Glycera guatemalensis* BÖGGEMANN & FIEGE 2001. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: USNM 35980)

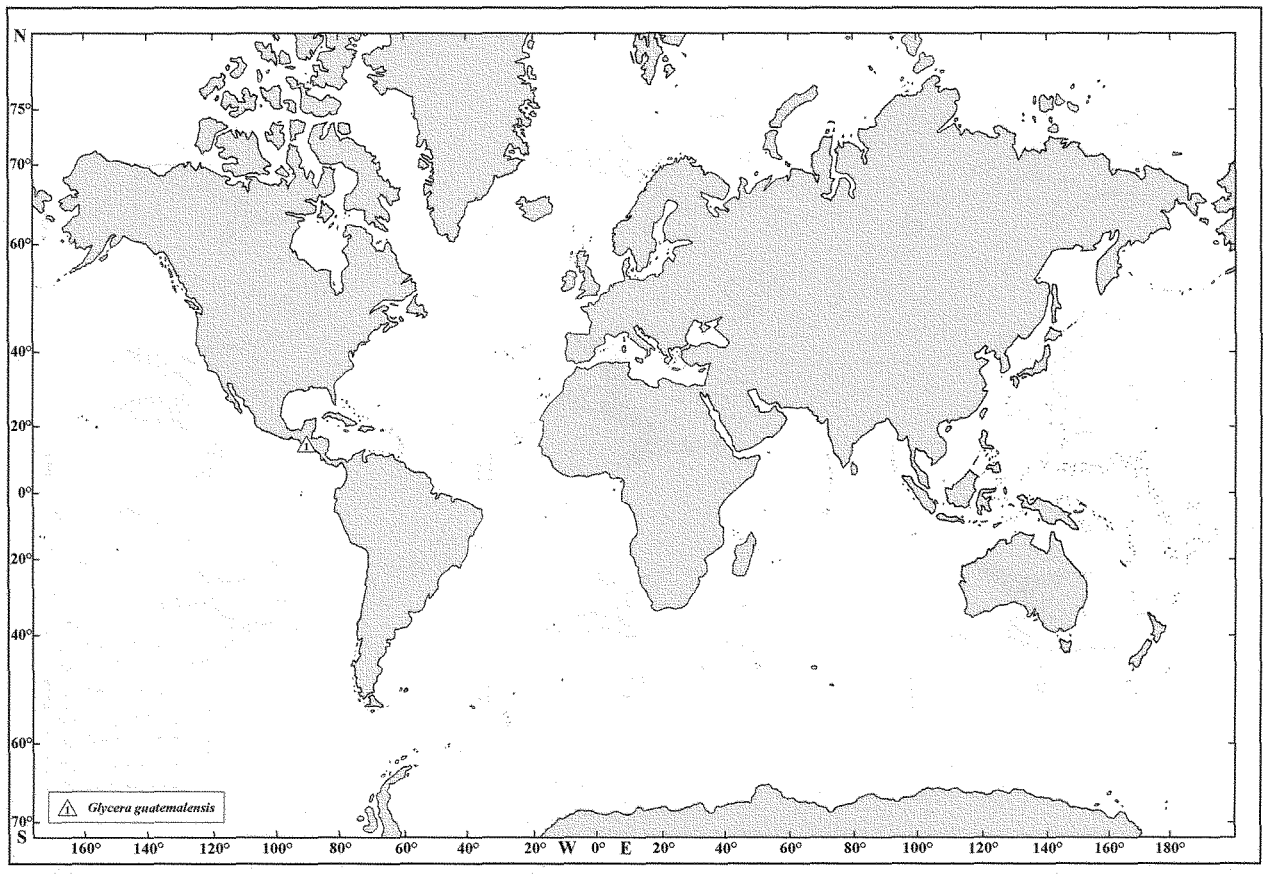

Fig. 33: Distribution of *Glycera guatemalensis* BÖGGEMANN & FIEGE 2001.

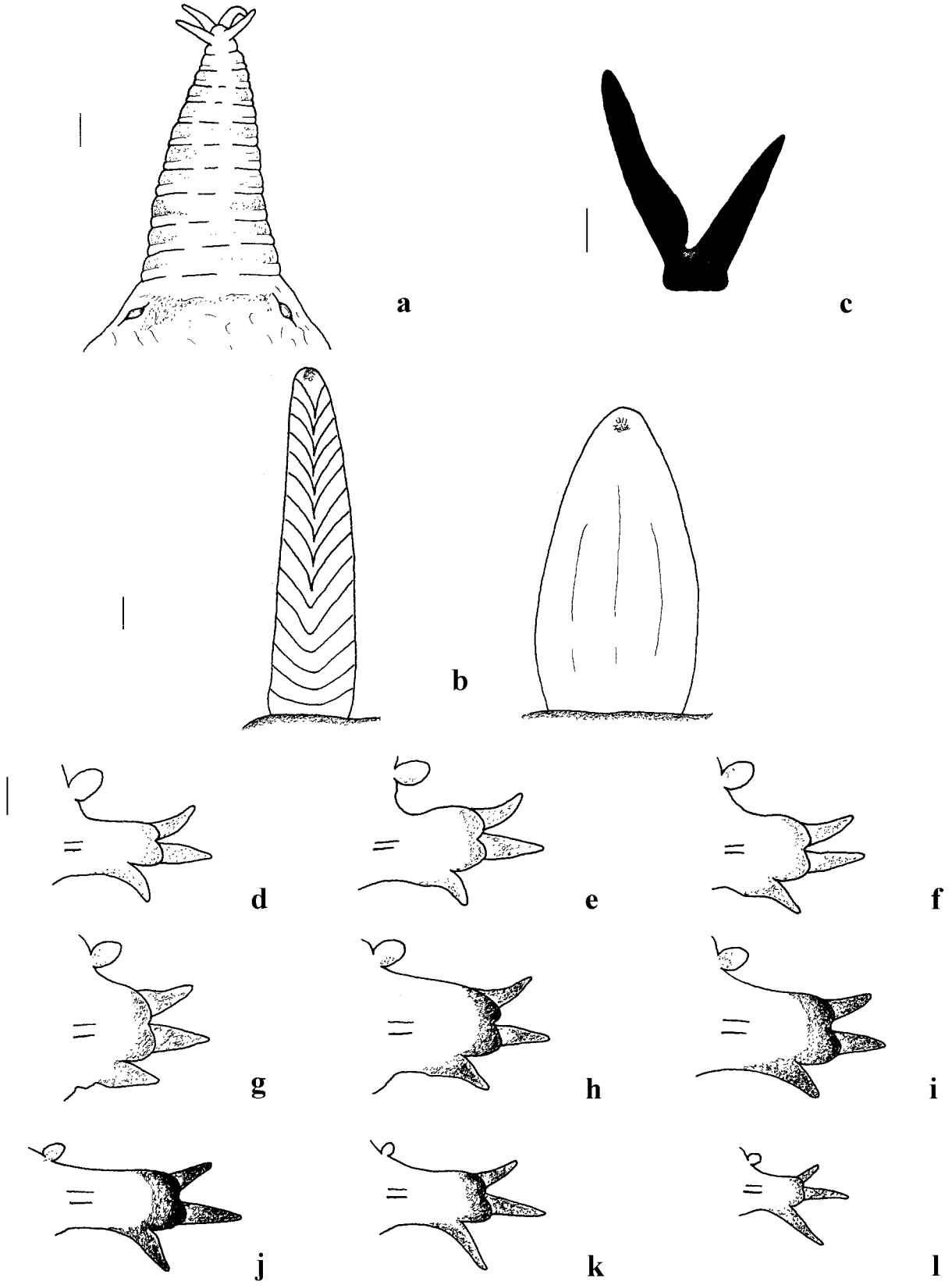

Fig. 34: *Glycera brevicirris* GRUBE 1870. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a, c-l: SMF 9423, b: HZM V-1091; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

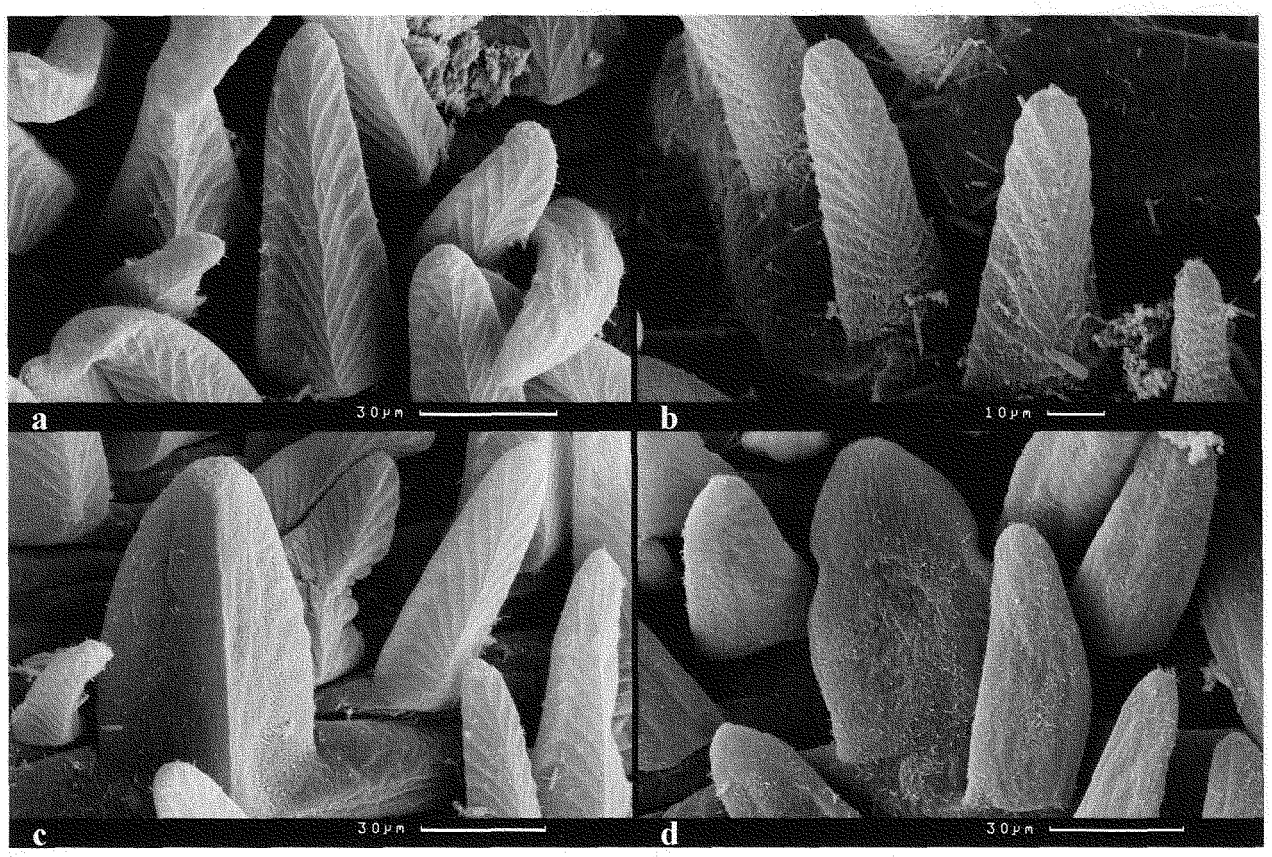

Fig. 35: *Glycera brevicirris* GRUBE 1870. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, c-d: ZMA[4], b: AMNH 2340 A)

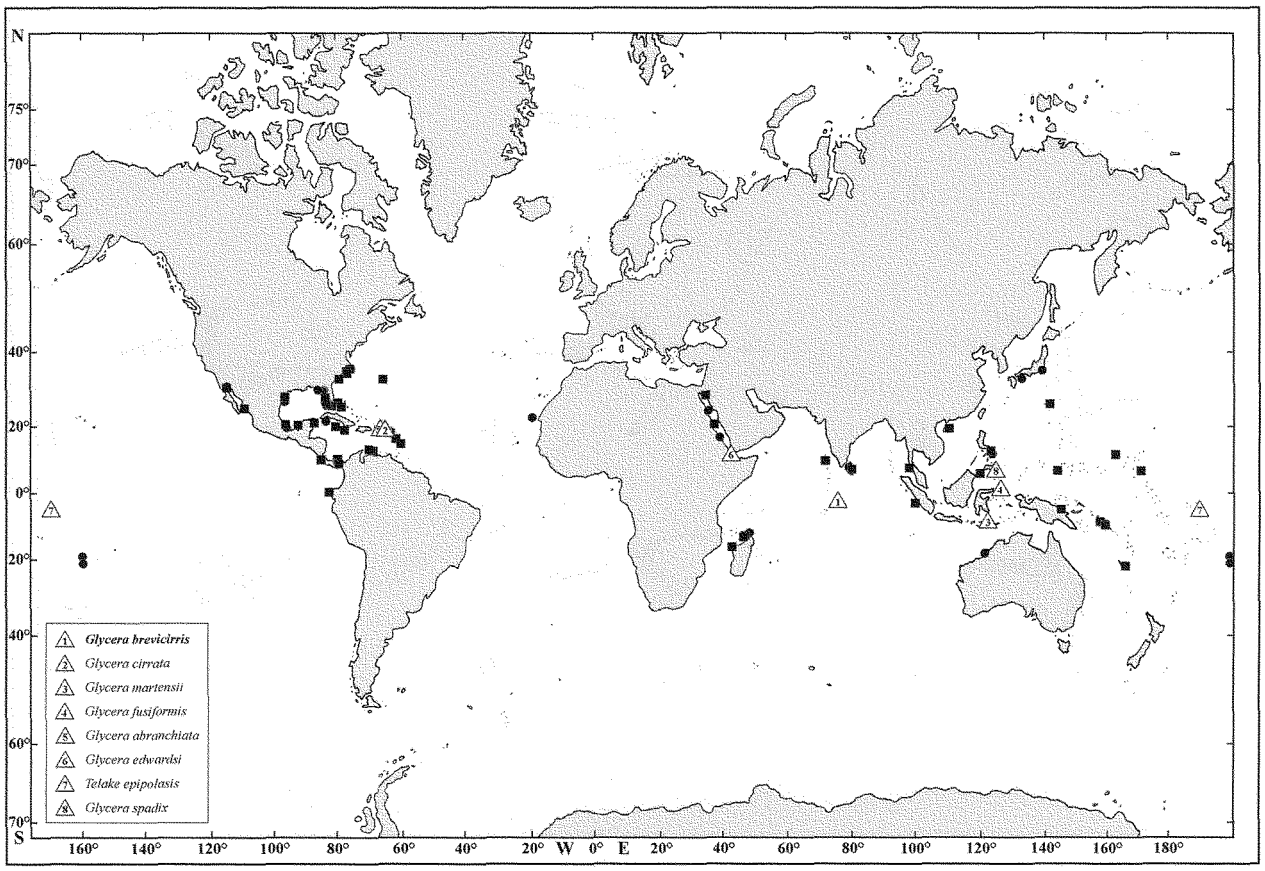

Fig. 36: Distribution of *Glycera brevicirris* GRUBE 1870.

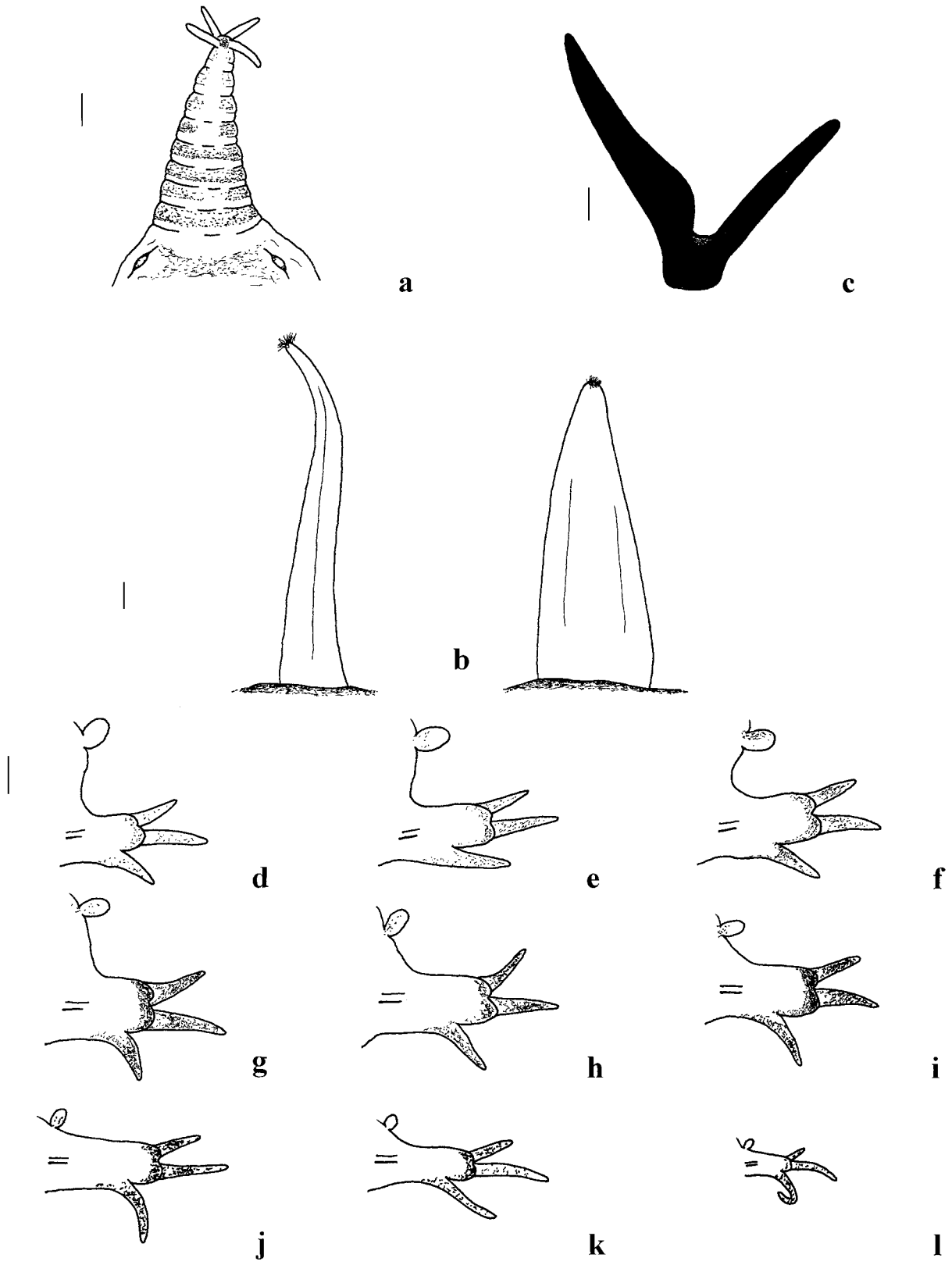

Fig. 37: *Glycera tesselata* GRUBE 1863. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-b, d-l: SMF 9396, c: SMF 9420; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

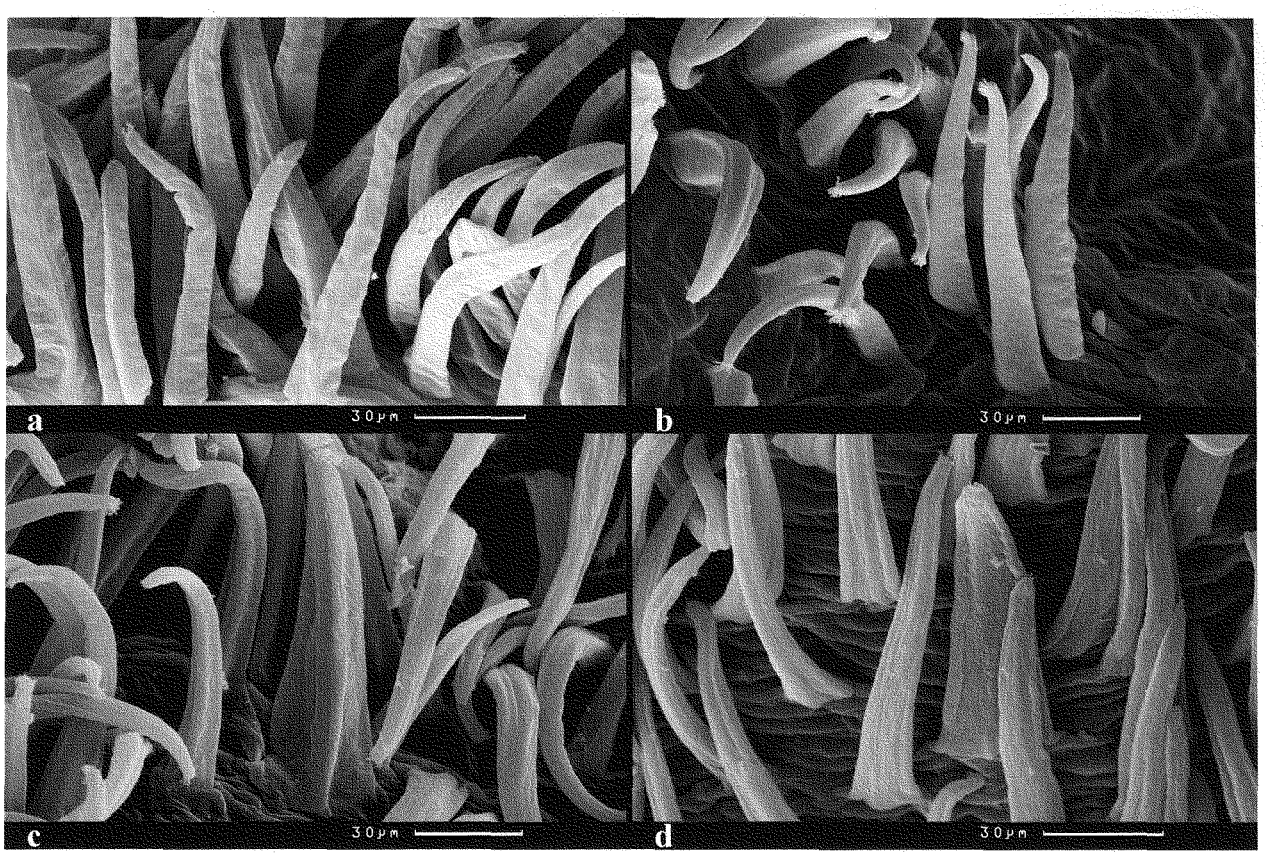

Fig. 38: *Glycera tesselata* GRUBE 1863. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: ZMB Q. 4340, b: SMF 9397, c-d: SMF 9396)

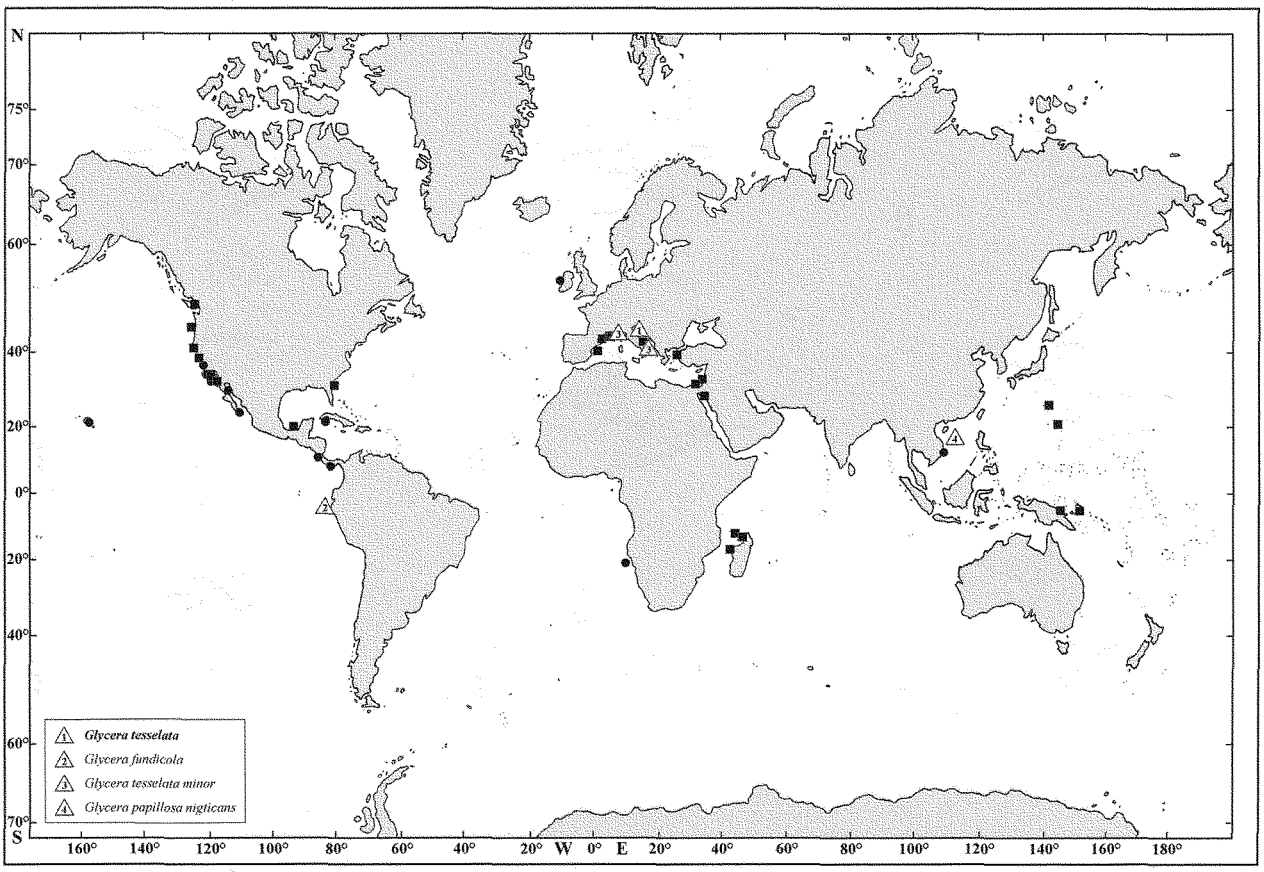

Fig. 39: Distribution of *Glycera tesselata* GRUBE 1863.

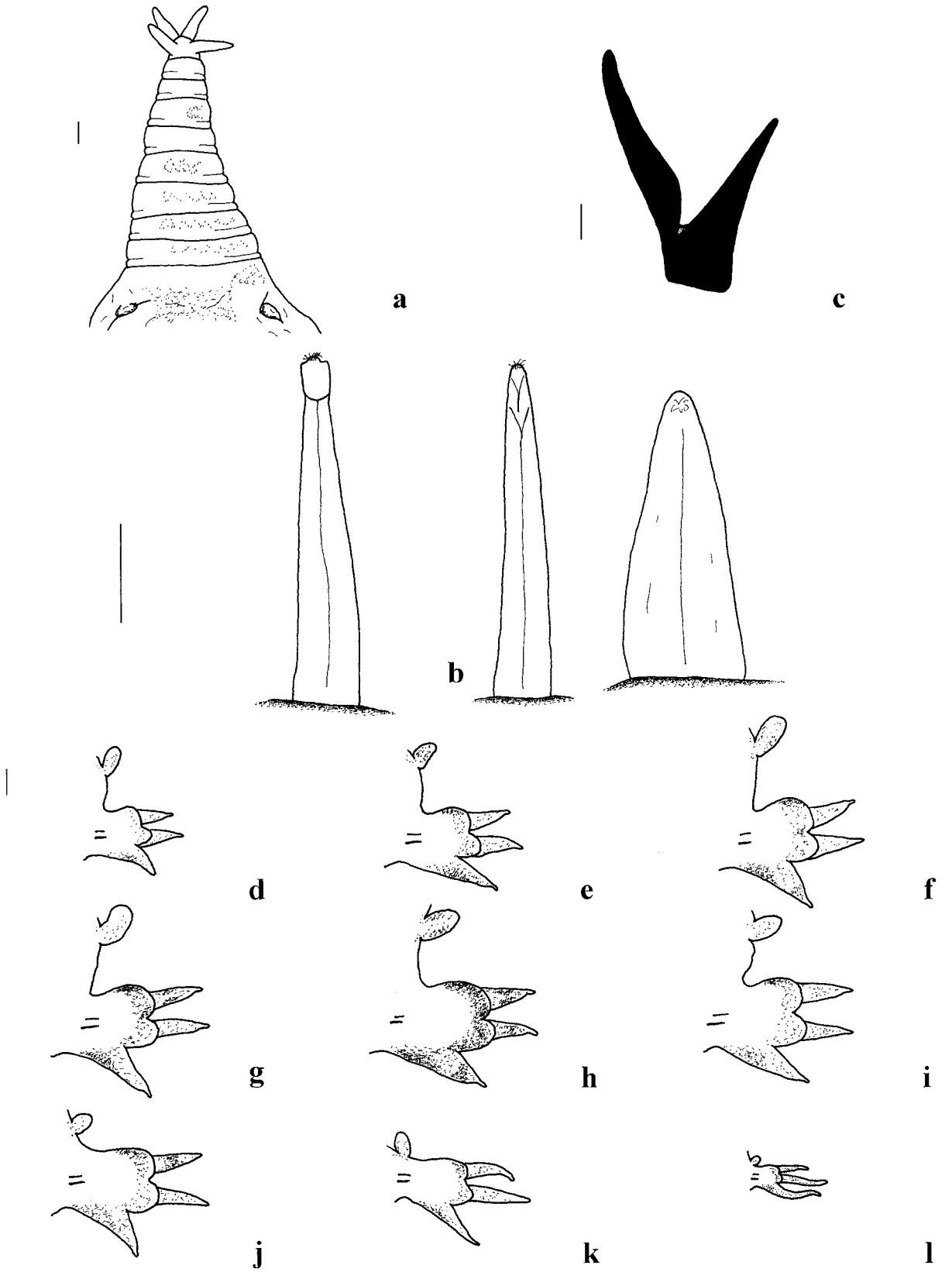

Fig. 40: *Glycera benhami* BÖGGEMANN & FIEGE 2001. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: NZOI A441; scale bars: a, c-l = 0.1 mm, b = 0.05 mm)

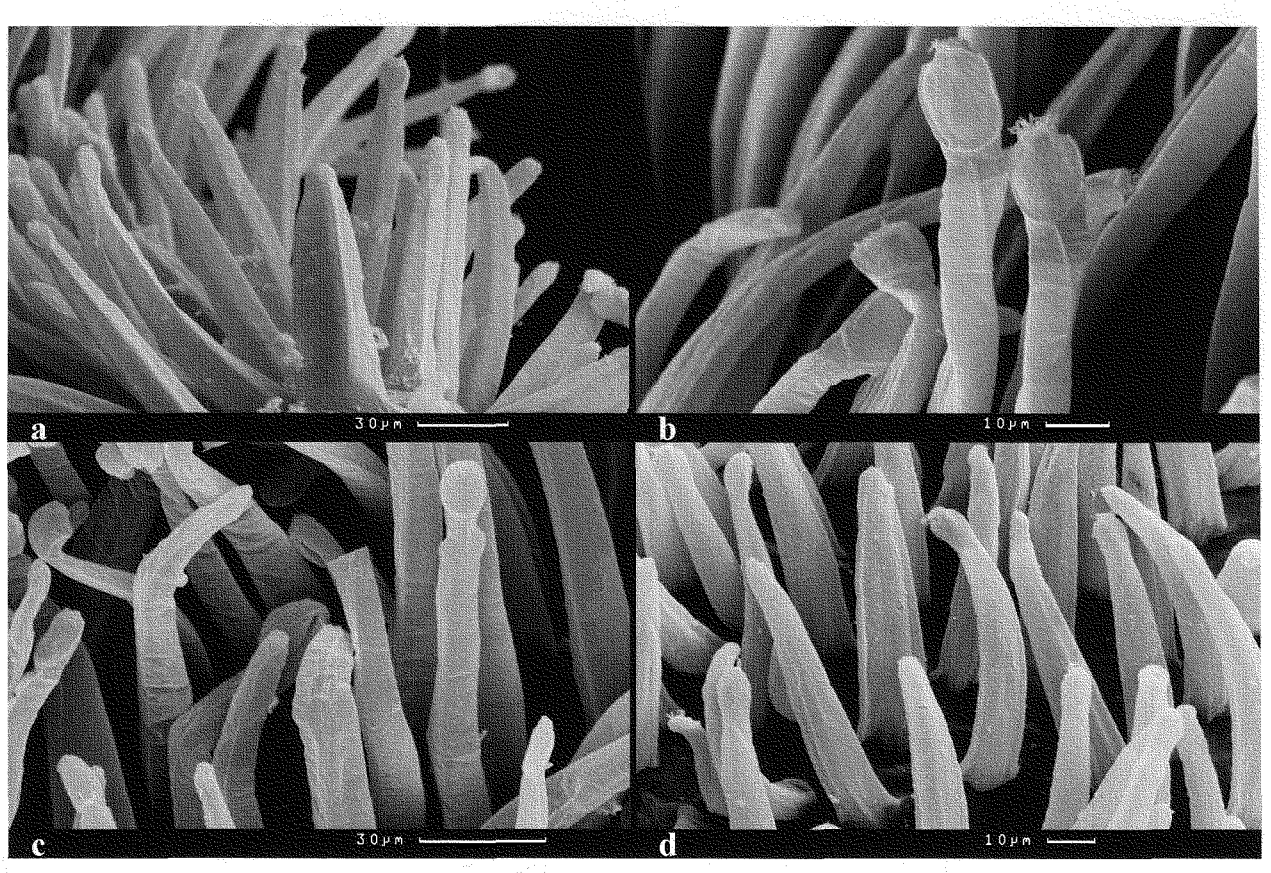

Fig. 41: *Glycera benhami* BÖGGEMANN & FIEGE 2001. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: NZOI U285, b: MV F 80216, c: MV F 80212, d: MV F 80208)

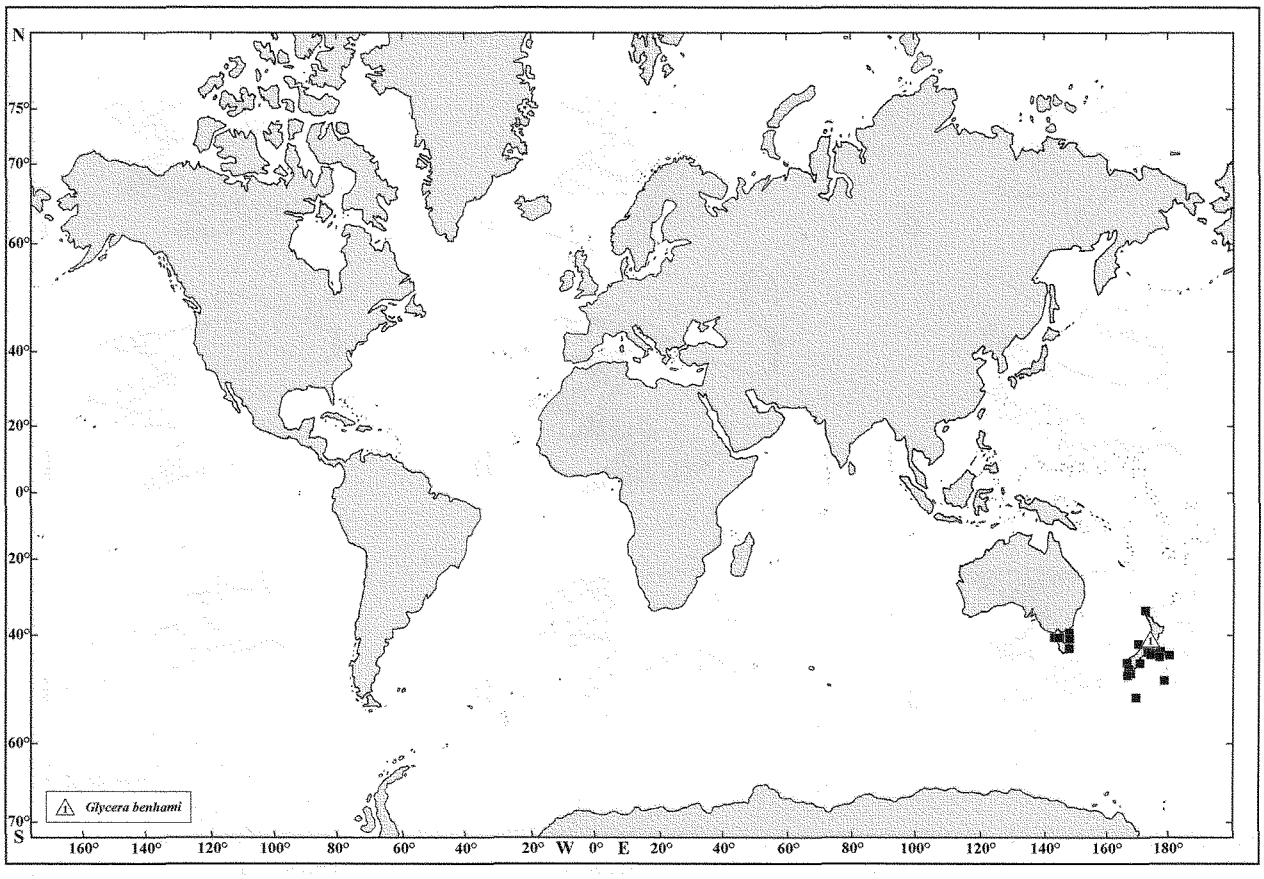

Fig. 42: Distribution of *Glycera benhami* BÖGGEMANN & FIEGE 2001.

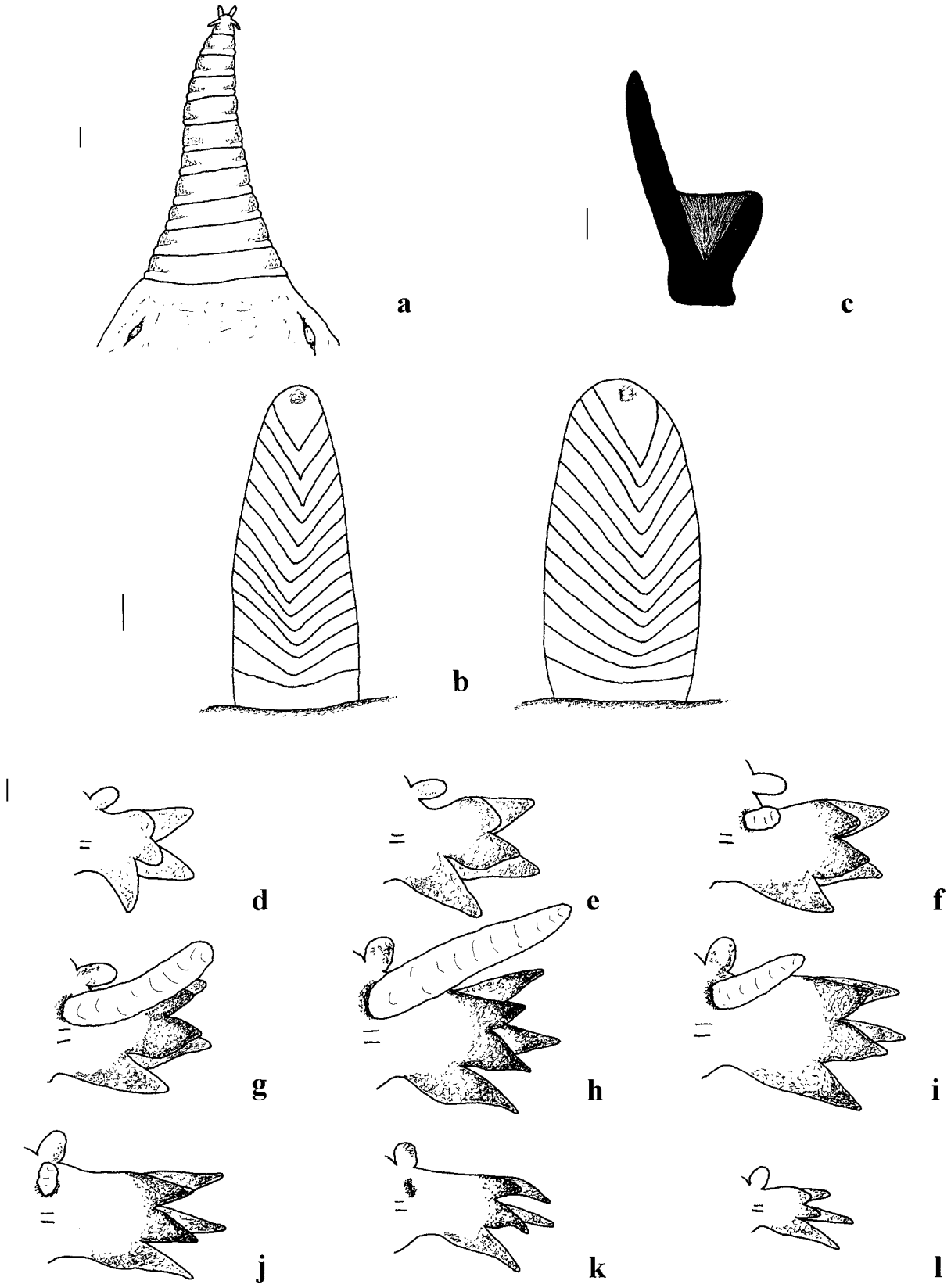

Fig. 43: *Glycera russa* GRUBE 1870. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a, c: NZOI V367 TAM, b: NZOI A964, d-l: ZMB 6666; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

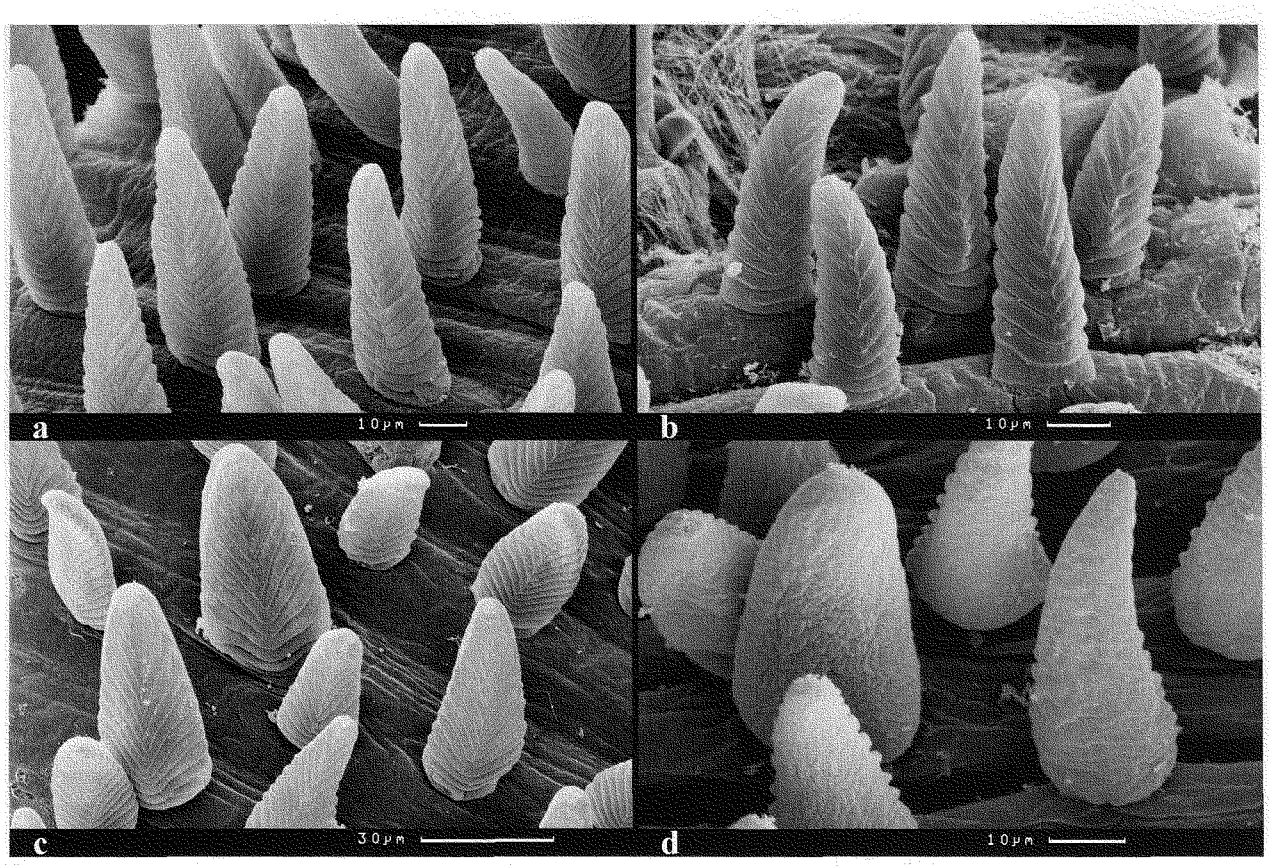

Fig. 44: *Glycera russa* GRUBE 1870. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, c-d: NZOI Z8443, b: NZOI V366)

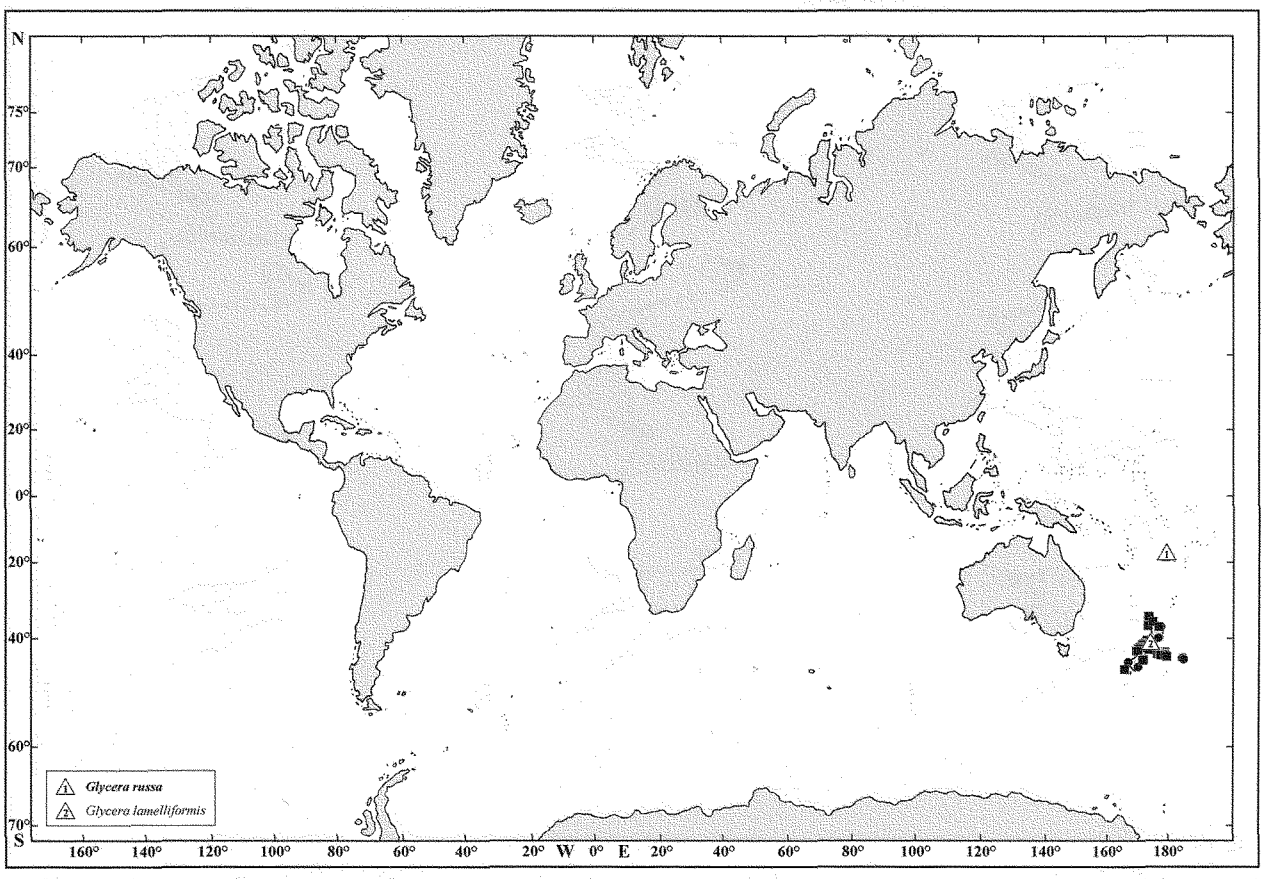

Fig. 45: Distribution of *Glycera russa* GRUBE 1870.

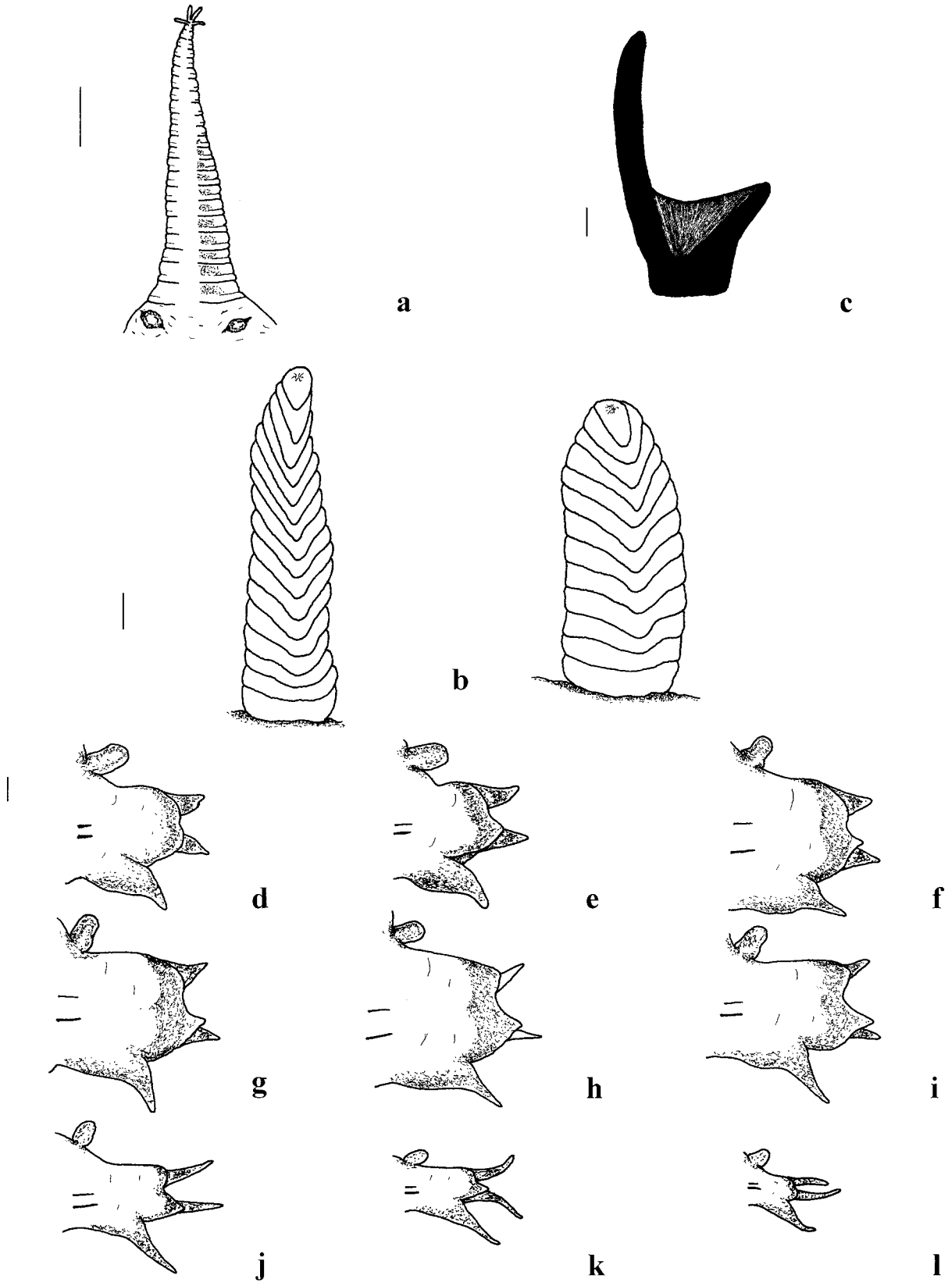

Fig. 46: *Glycera bassensis* BÖGGEMANN & FIEGE 2001. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: MV F 80207, b-l: MV F 80203; scale bars: a = 0.5 mm, b = 0.01 mm, c-l = 0.1 mm)

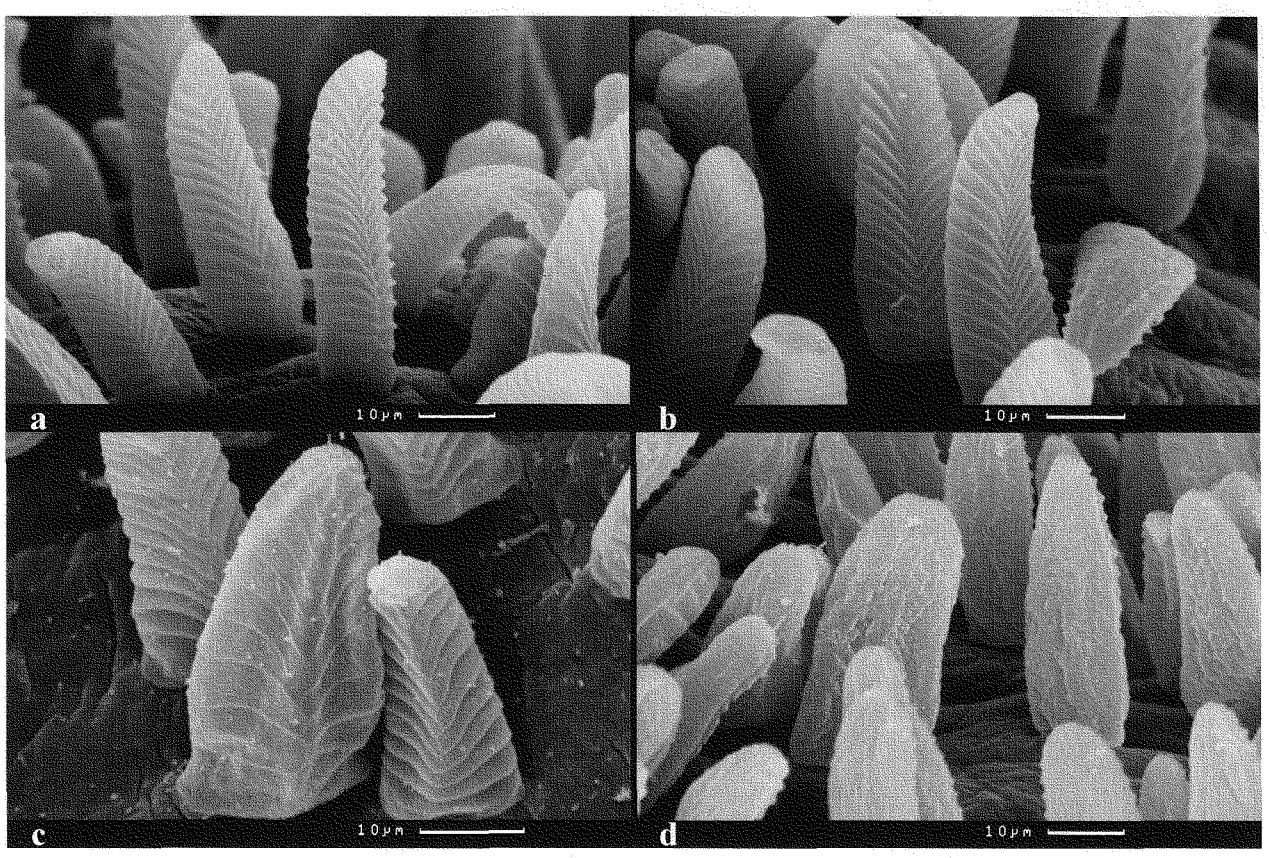

Fig. 47: *Glycera bassensis* BÖGGEMANN & FIEGE 2001. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b, d: SMF 9118, c: MV F 80213)

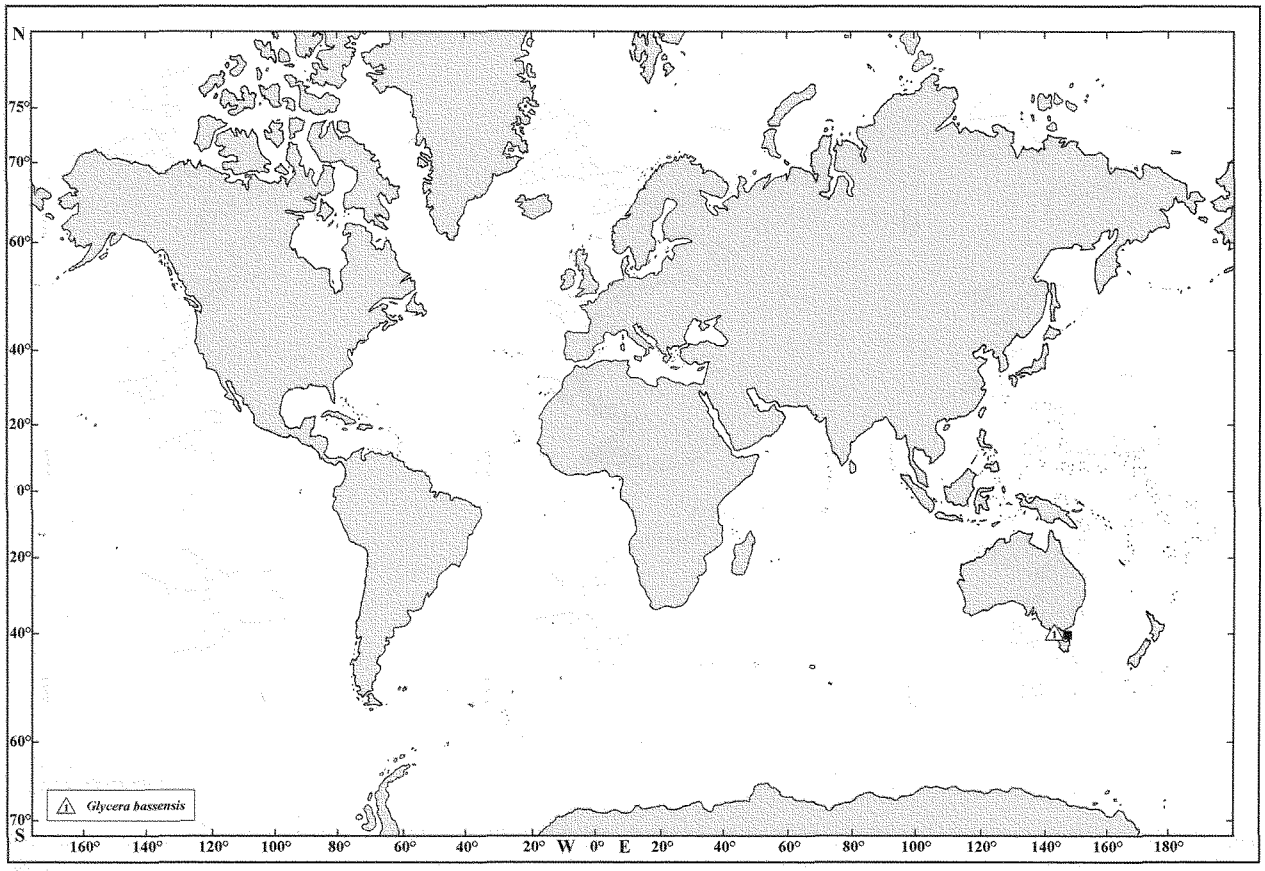

Fig. 48: Distribution of *Glycera bassensis* BÖGGEMANN & FIEGE 2001.

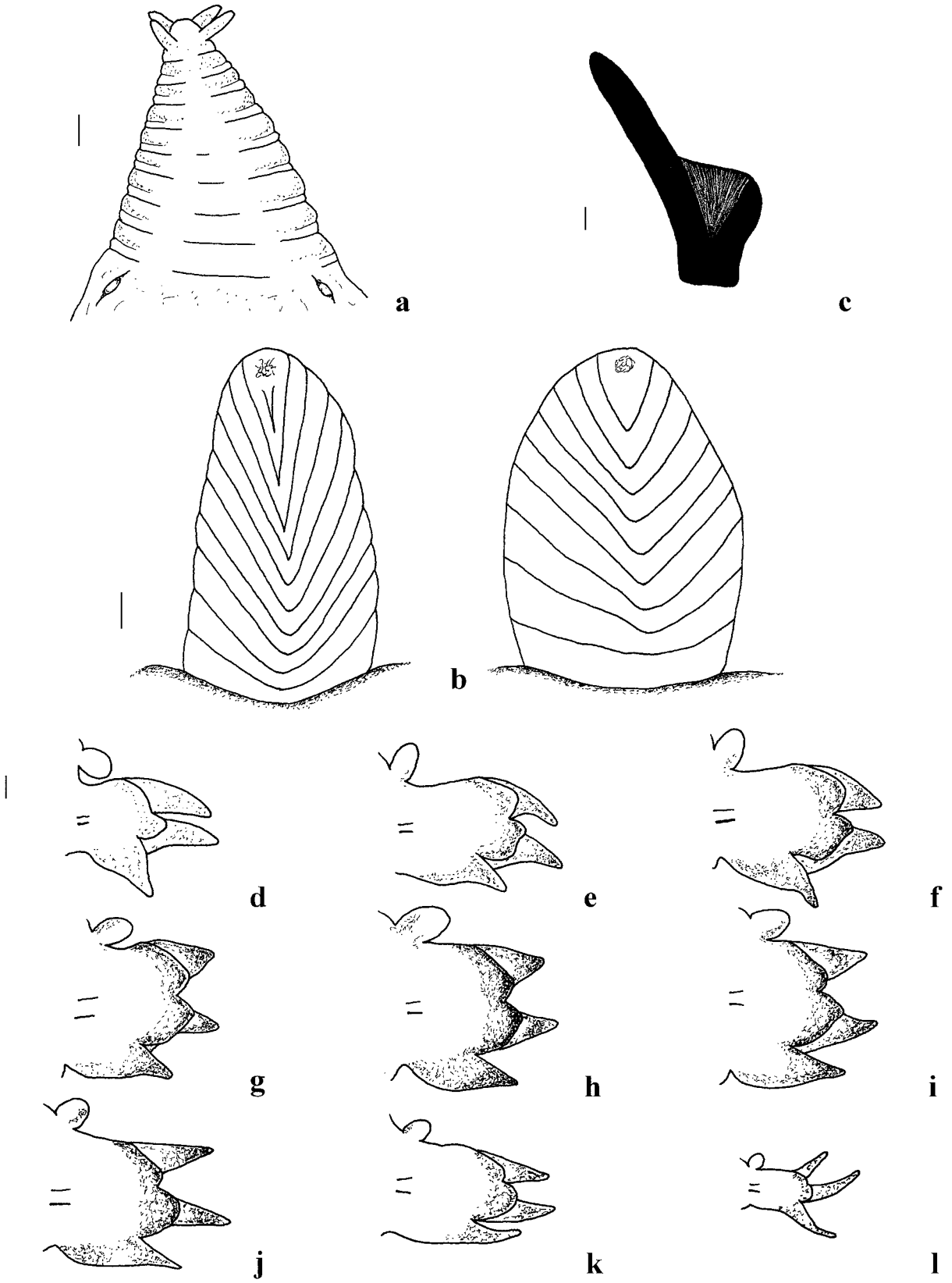

Fig. 49: *Glycera celtica* O'CONNOR 1987. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: SMF 9446, b: SMF 9444, c-l: NMI 83.1985; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

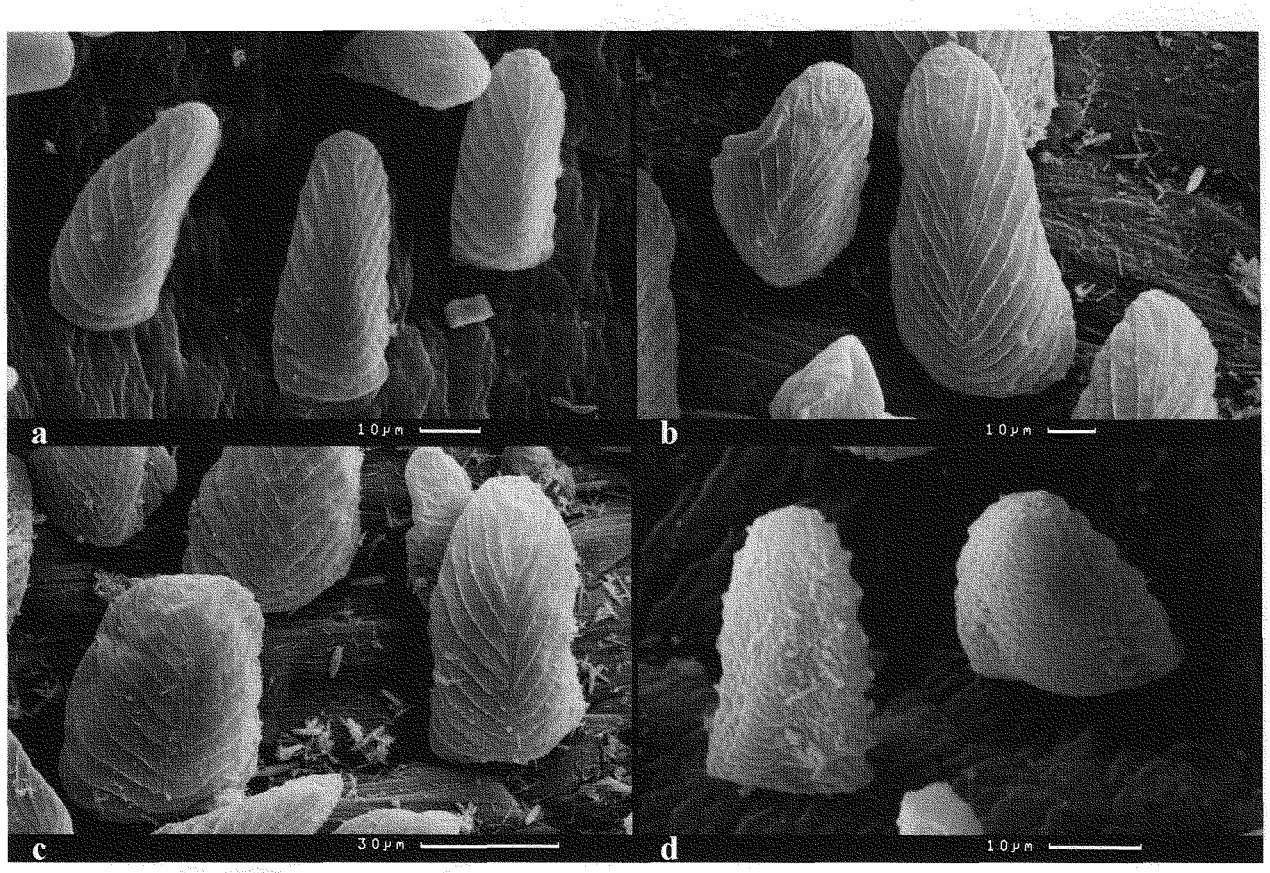

Fig. 50: *Glycera celtica* O'Connor 1987. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, d: SMF 9443, b-d: ZMB 96)

Fig. 51: Distribution of *Glycera celtica* O'Connor 1987.

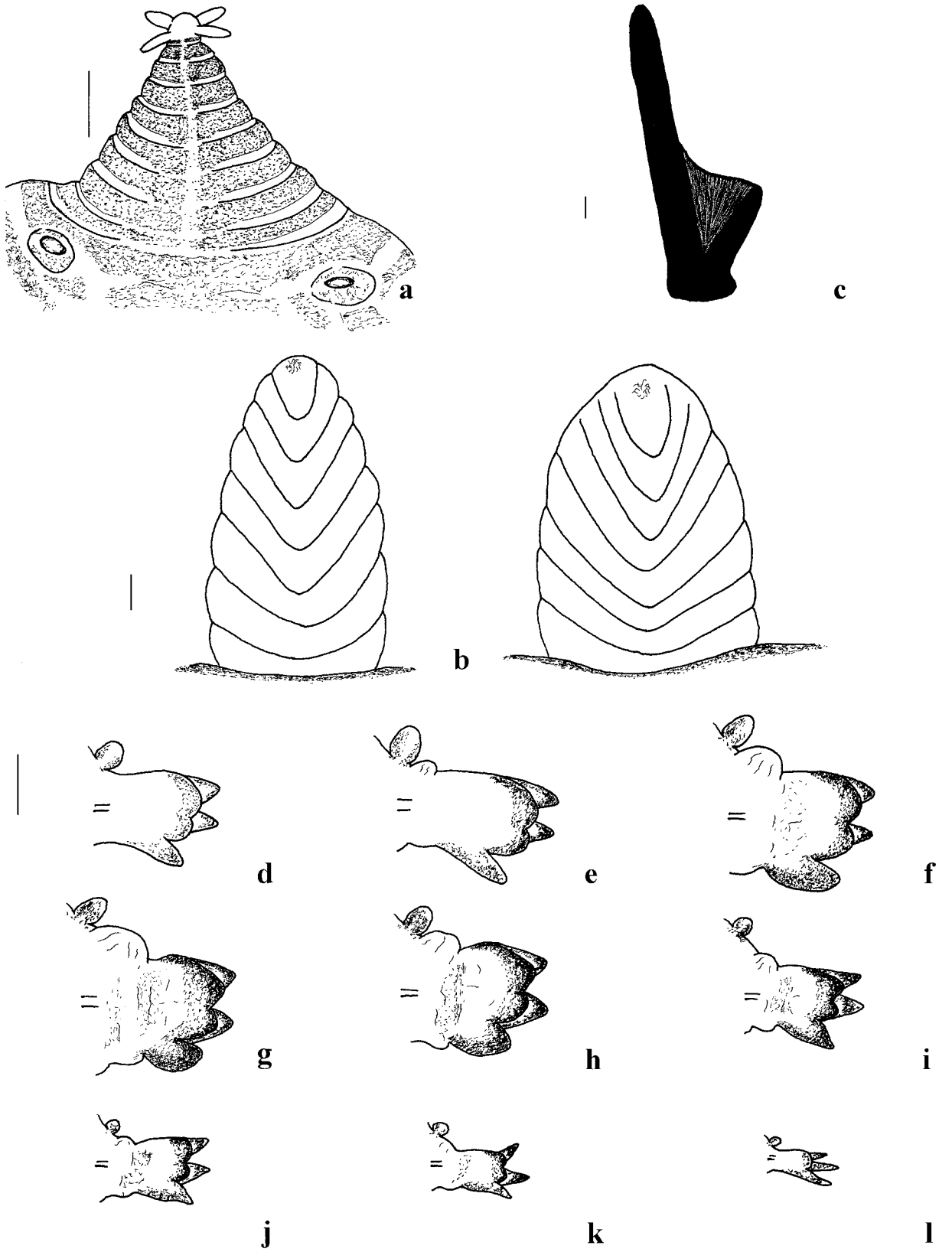

Fig. 52: *Glycera robusta* EHLERS 1868. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: SMF 9449, b, d-l: MCZ 233, c: HZM V-12595; scale bars: a, d-l = 0.5 mm, b = 0.01 mm, c = 0.1 mm)

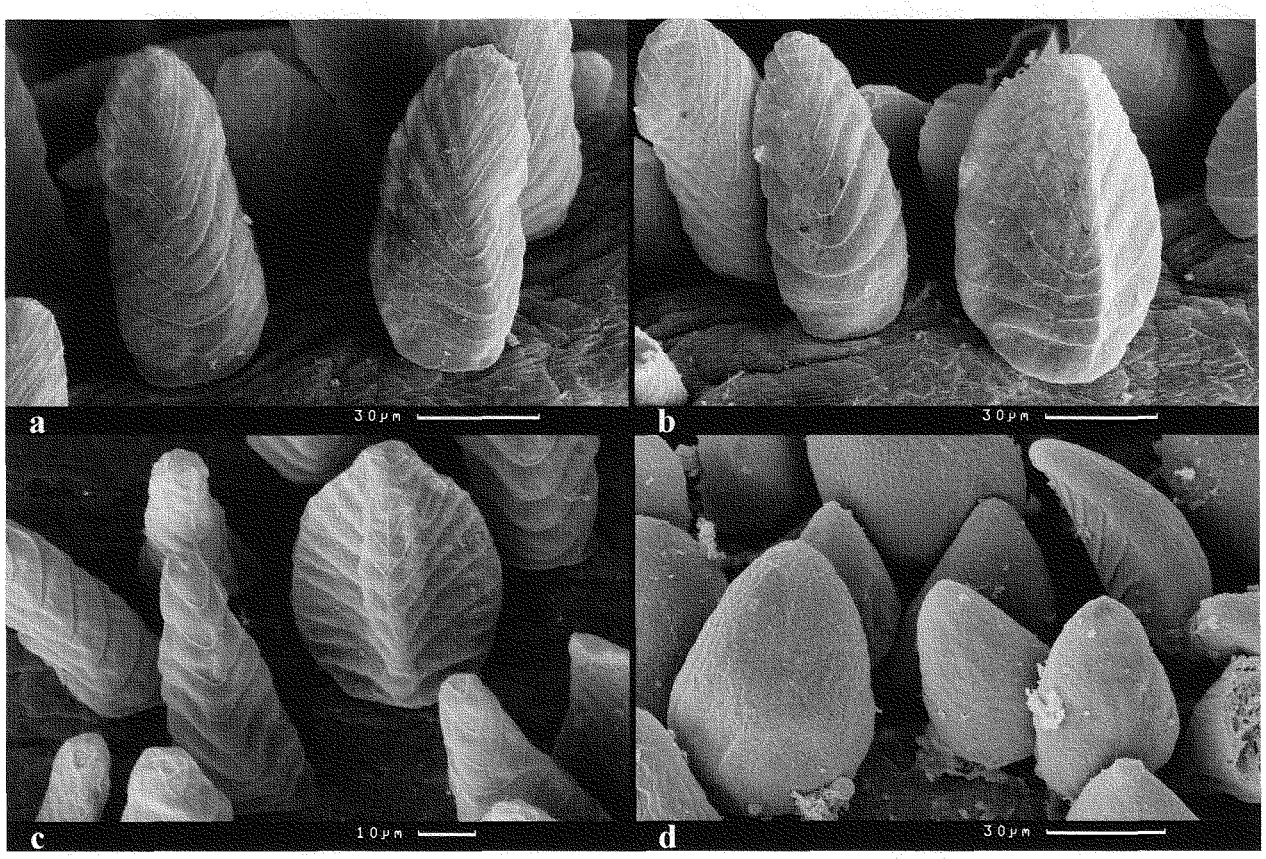

Fig. 53: *Glycera robusta* EHLERS 1868. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: USNM 5337, c: MCZ 233, d: SMF 9447)

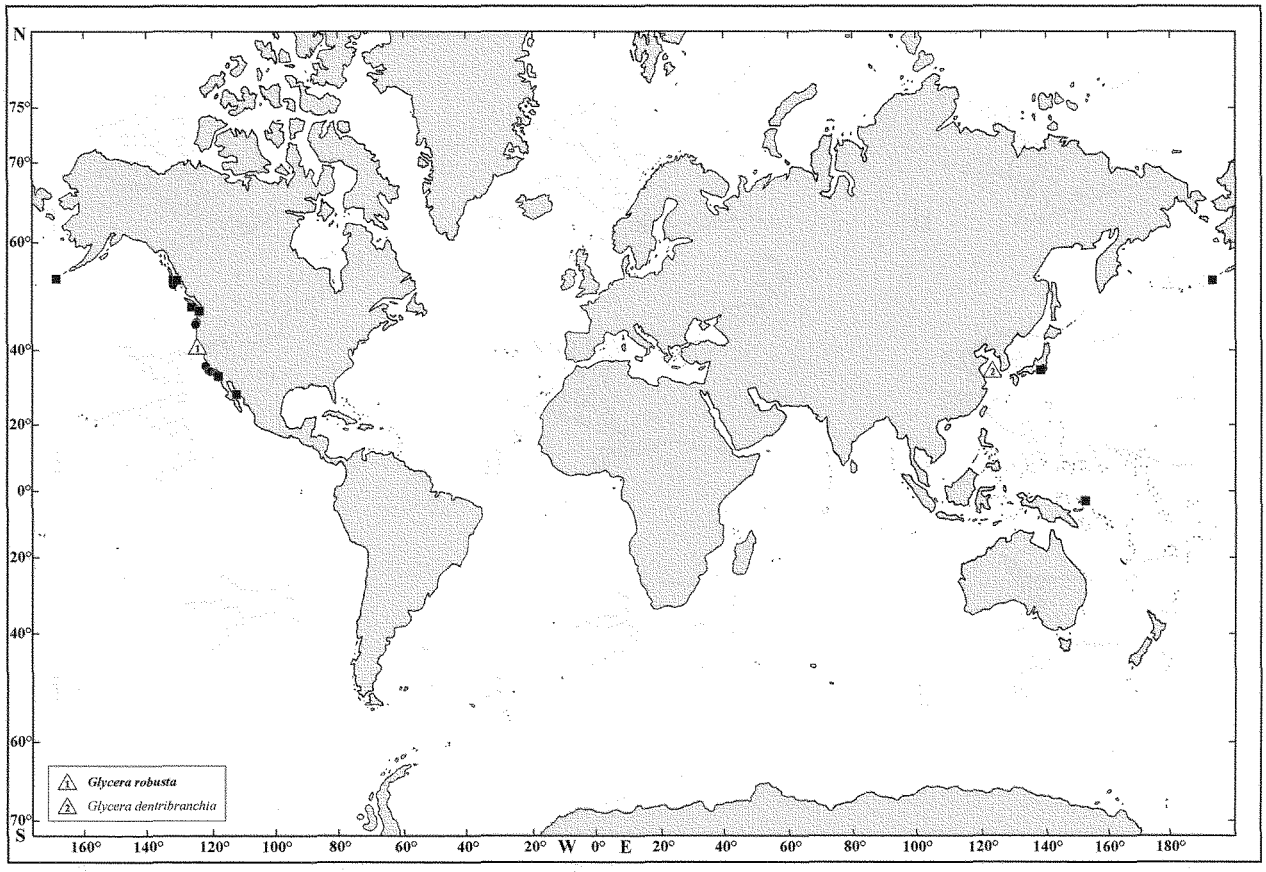

Fig. 54: Distribution of *Glycera robusta* EHLERS 1868.

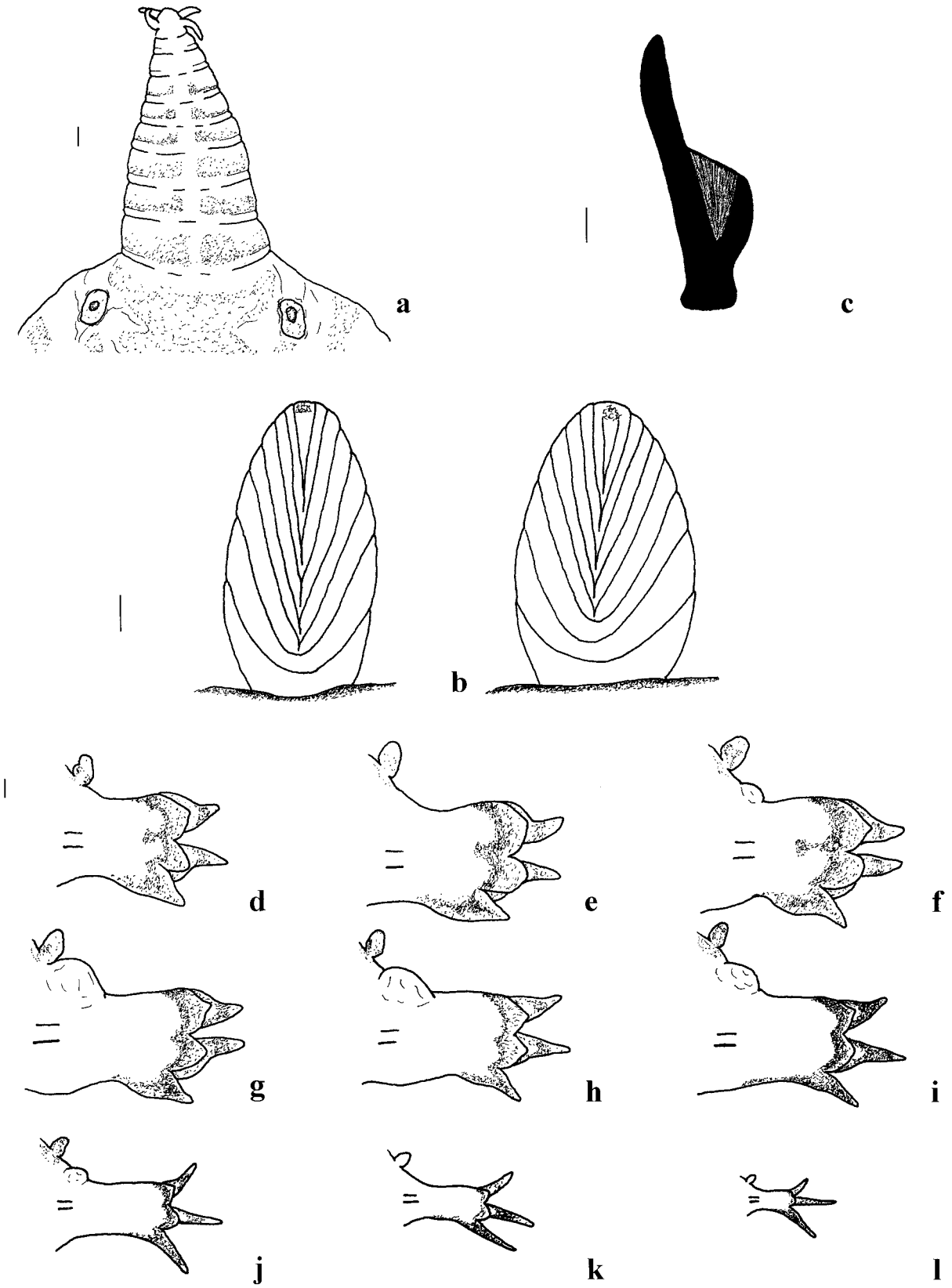

Fig. 55: *Glycera pseudorobusta* BÖGGEMANN & FIEGE 2001. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: USNM 52963; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

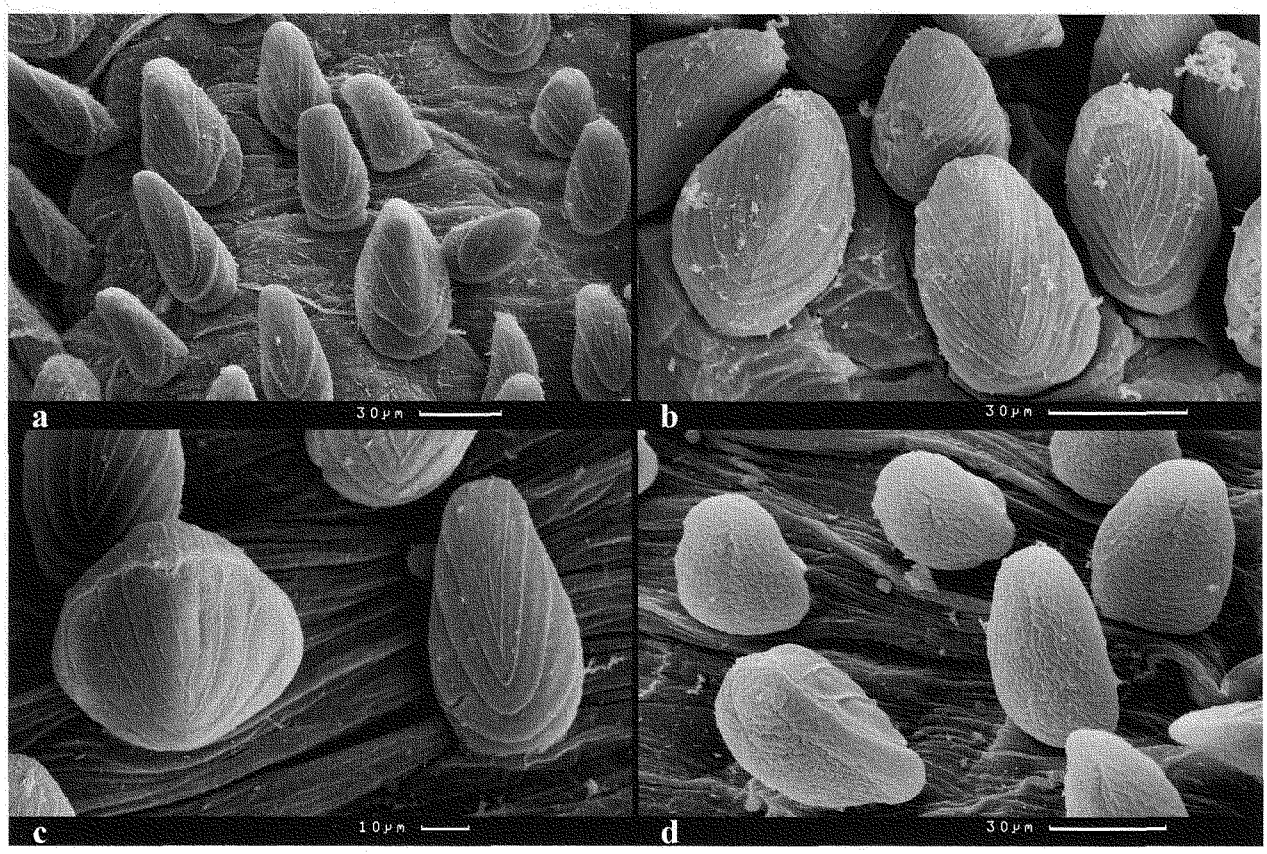

Fig. 56: *Glycera pseudorobusta* BÖGGEMANN & FIEGE 2001. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: USNM 149018, b: USNM 52963, c-d: USNM 30949)

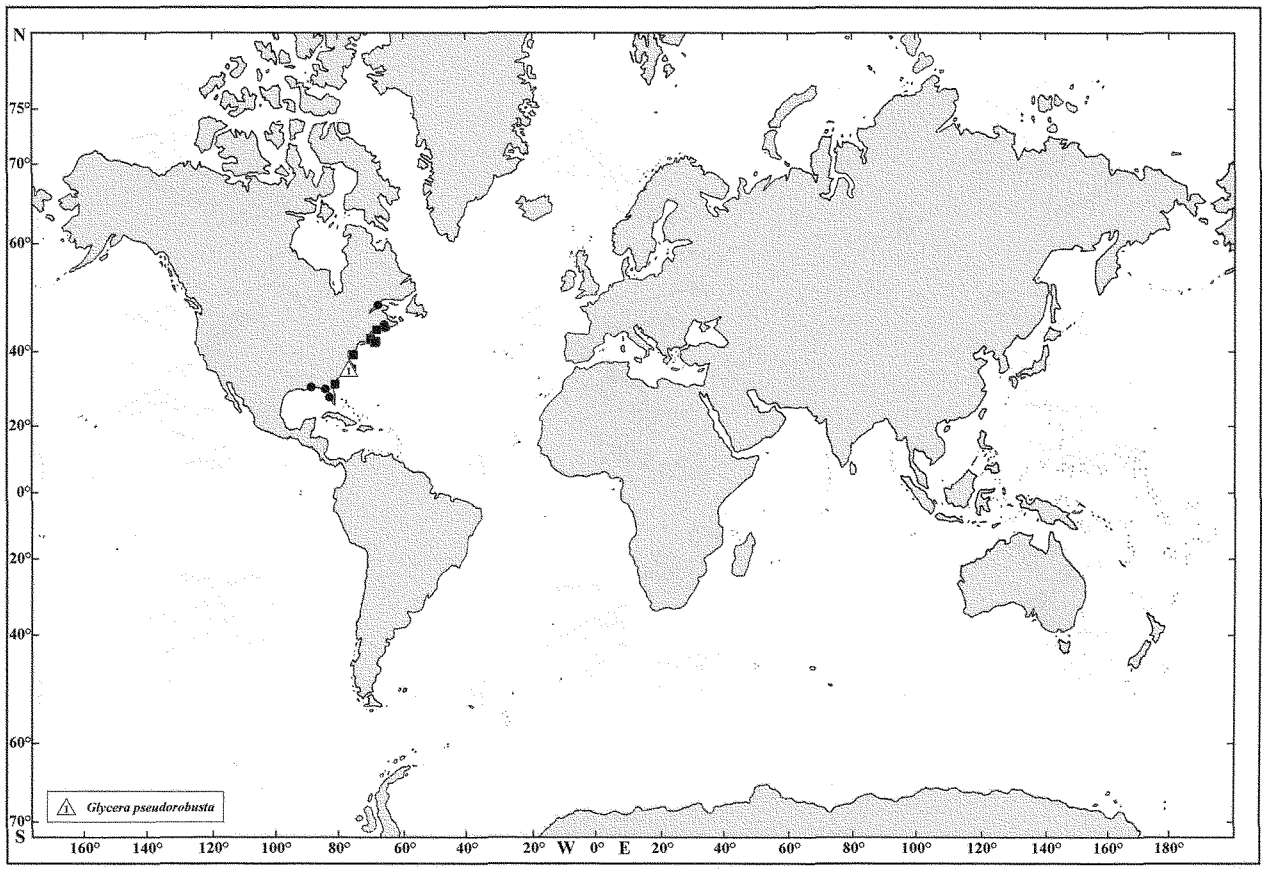

Fig. 57: Distribution of *Glycera pseudorobusta* BÖGGEMANN & FIEGE 2001.

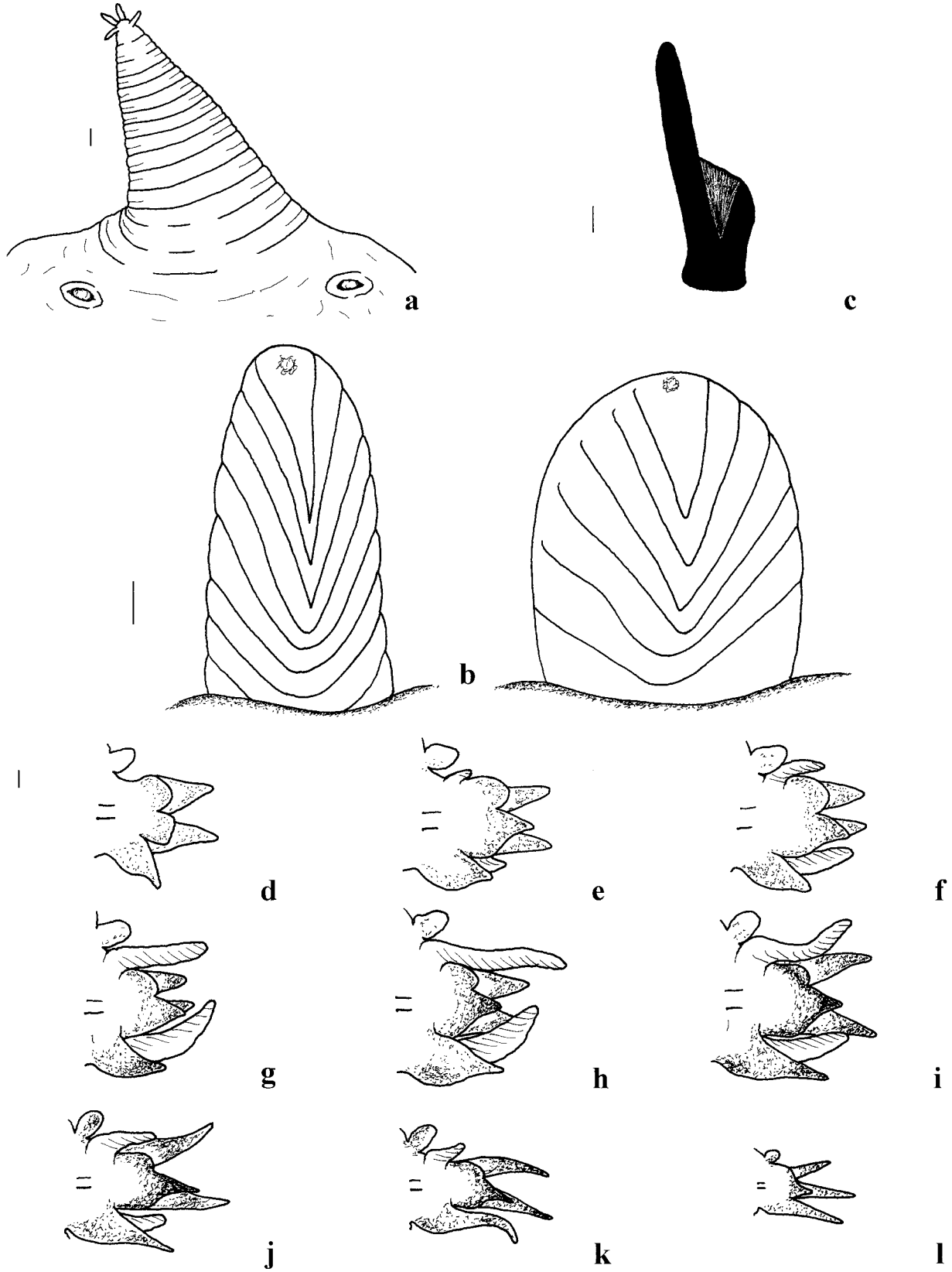

Fig. 58: *Glycera dibranchiata* EHLERS 1868. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: SMF 9452; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

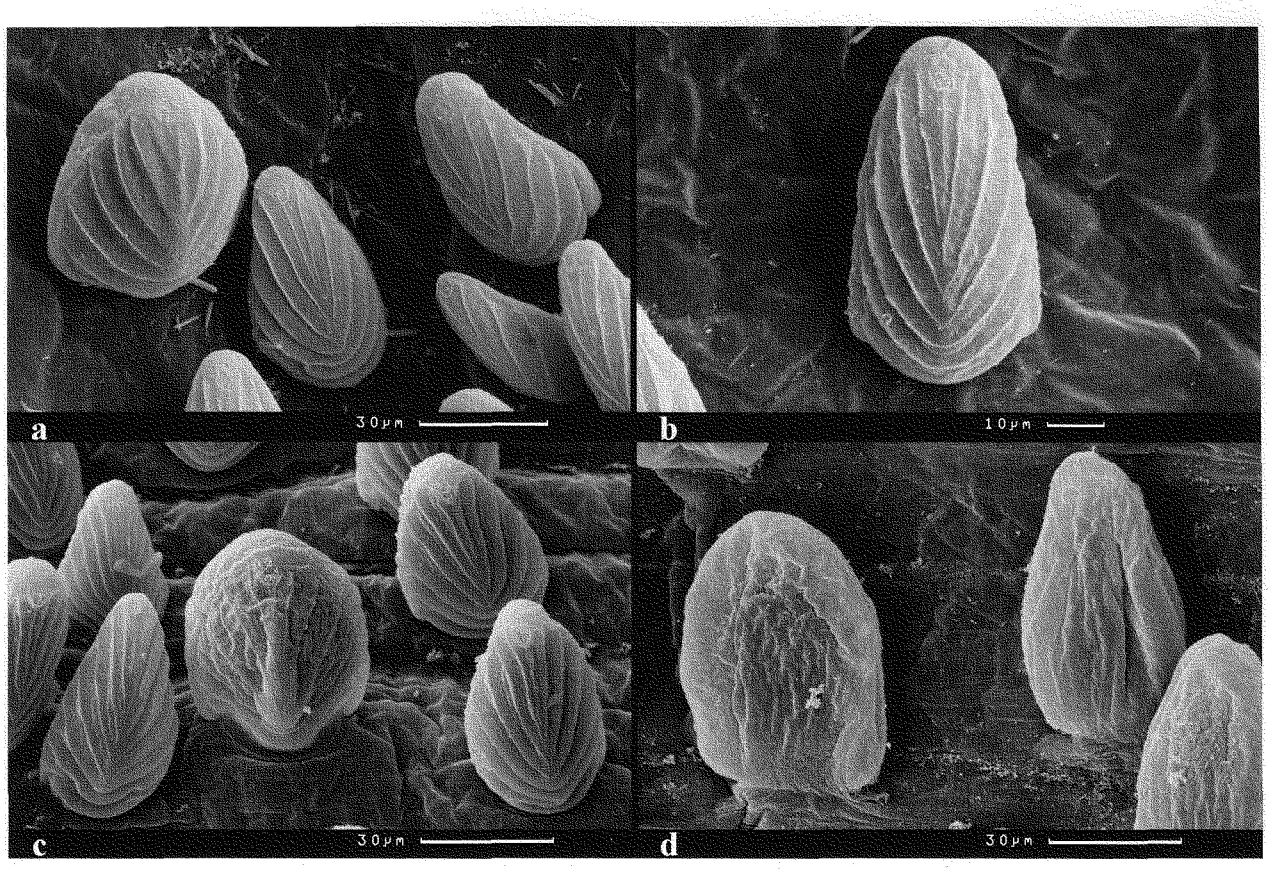

Fig. 59: *Glycera dibranchiata* EHLERS 1868. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: MCZ 167, c: SMF 9453, d: ZMB 2765)

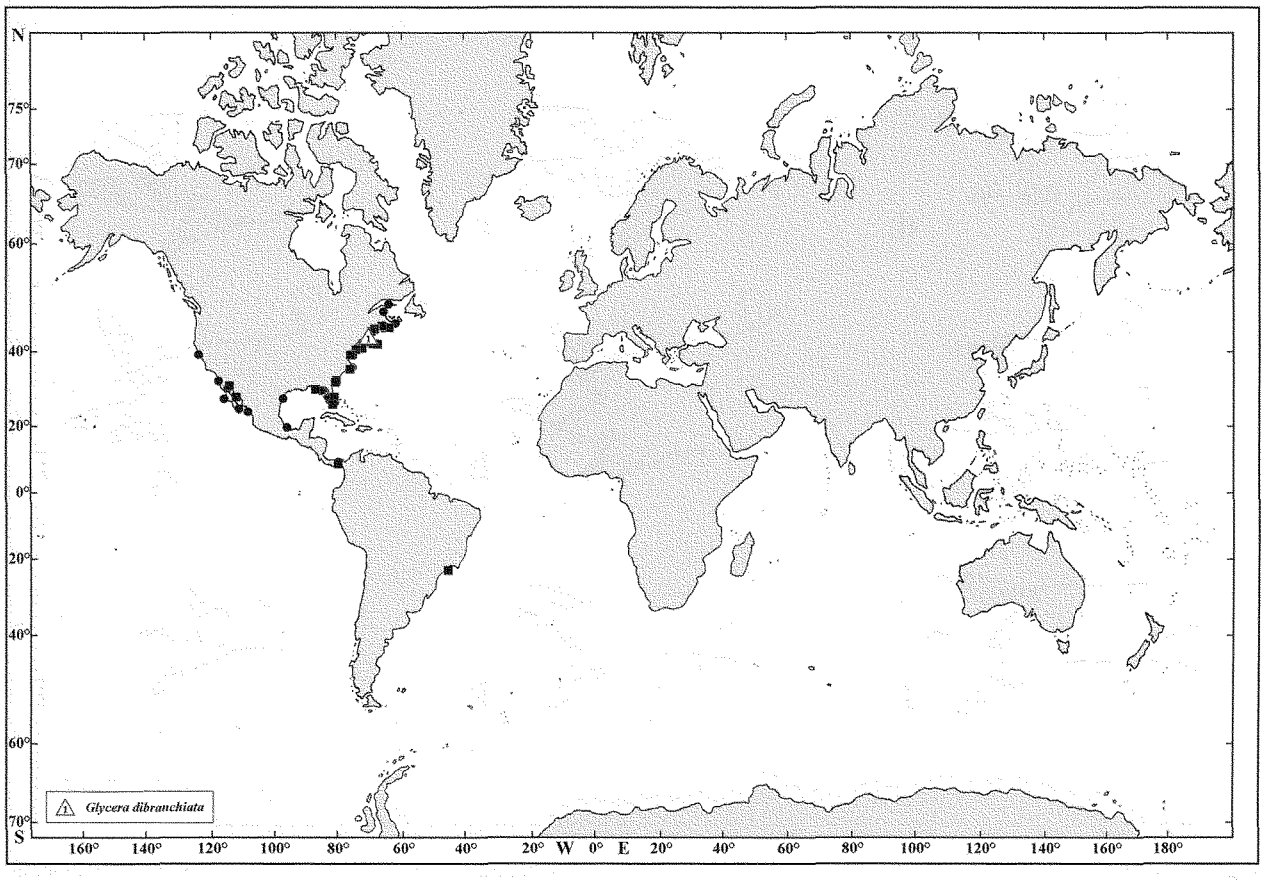

Fig. 60: Distribution of *Glycera dibranchiata* EHLERS 1868.

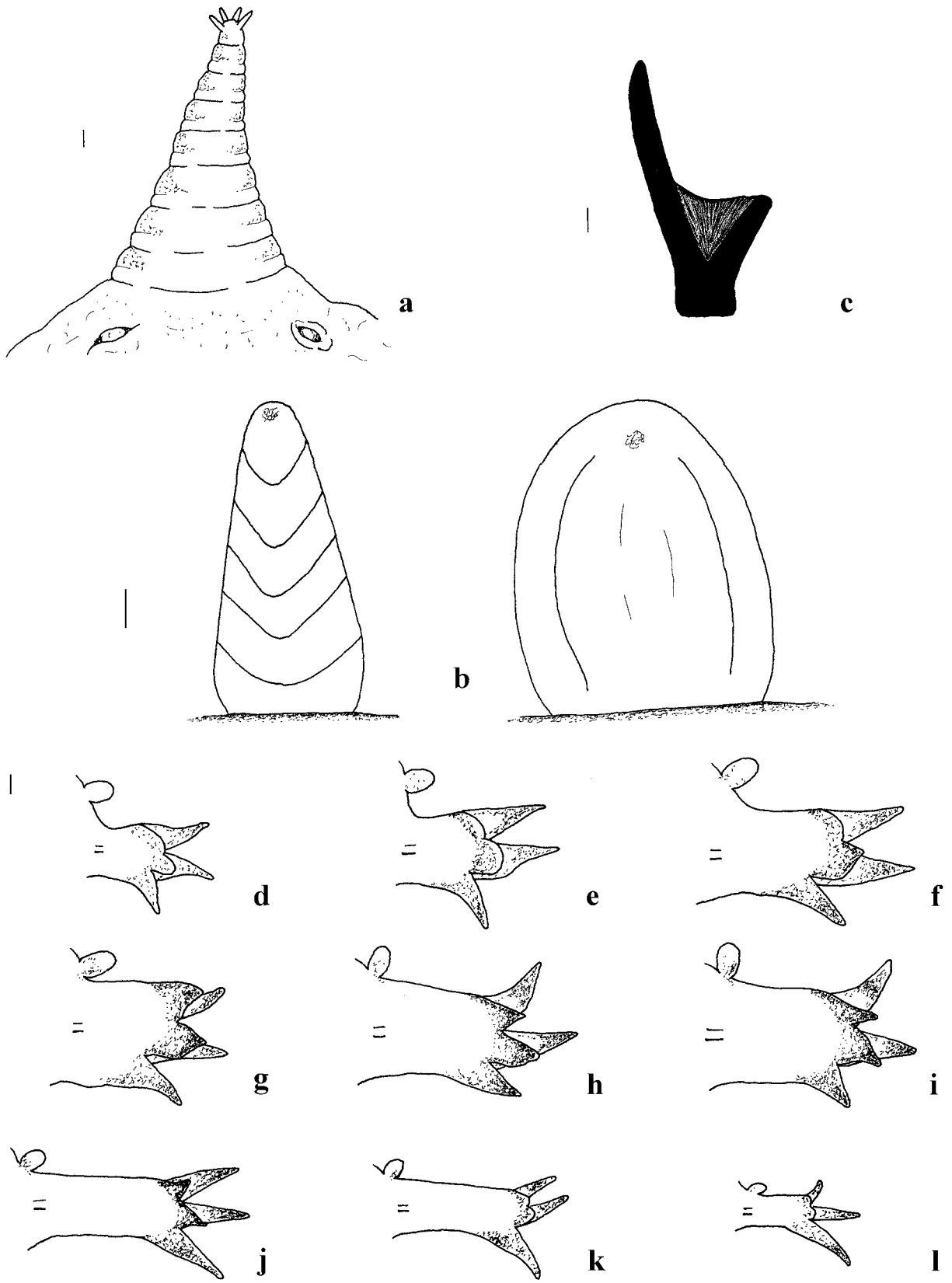

Fig. 61: *Glycera knoxi* KIRKEGAARD 1995. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: NZOI U238; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

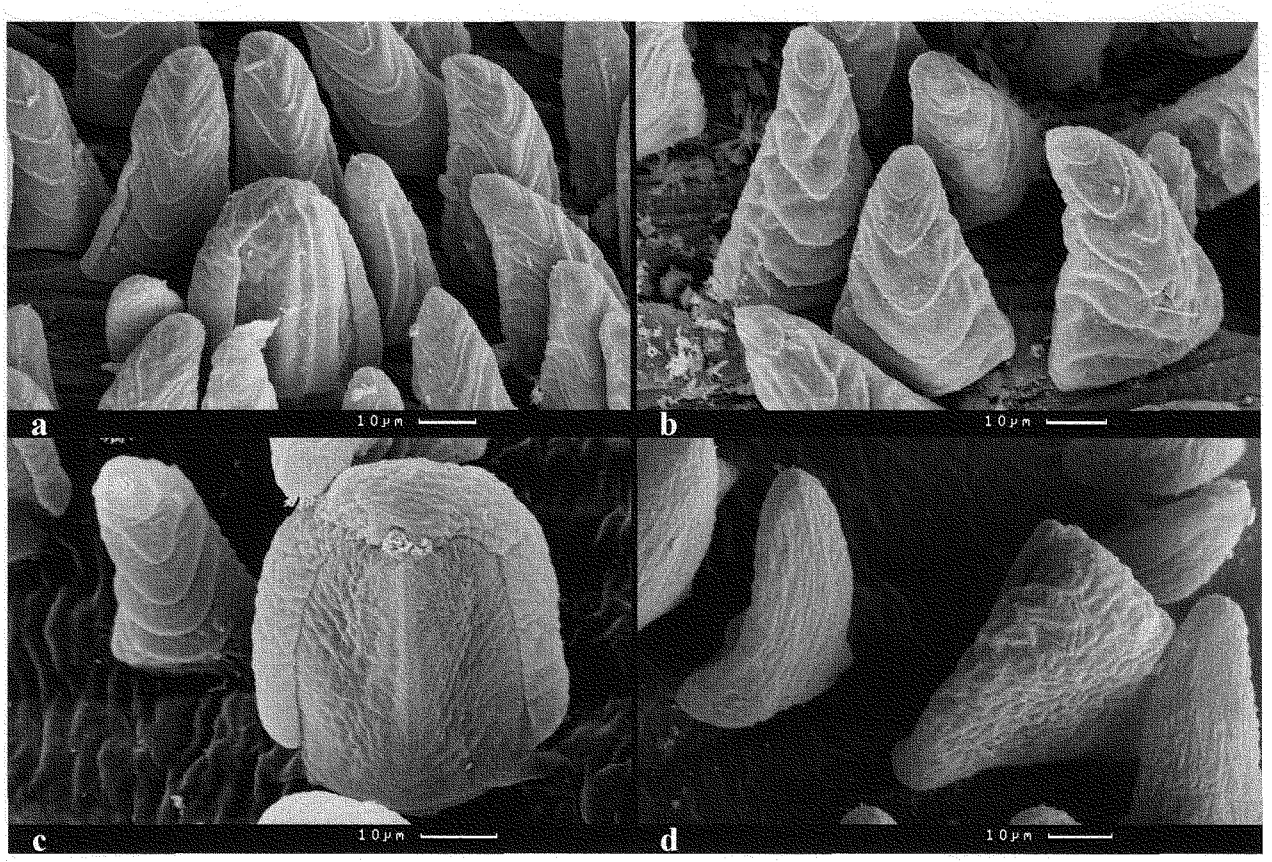

Fig. 62: *Glycera knoxi* KIRKEGAARD 1995. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: NZOI G280, b: NZOI G426, c-d: NZOI V371 DAB)

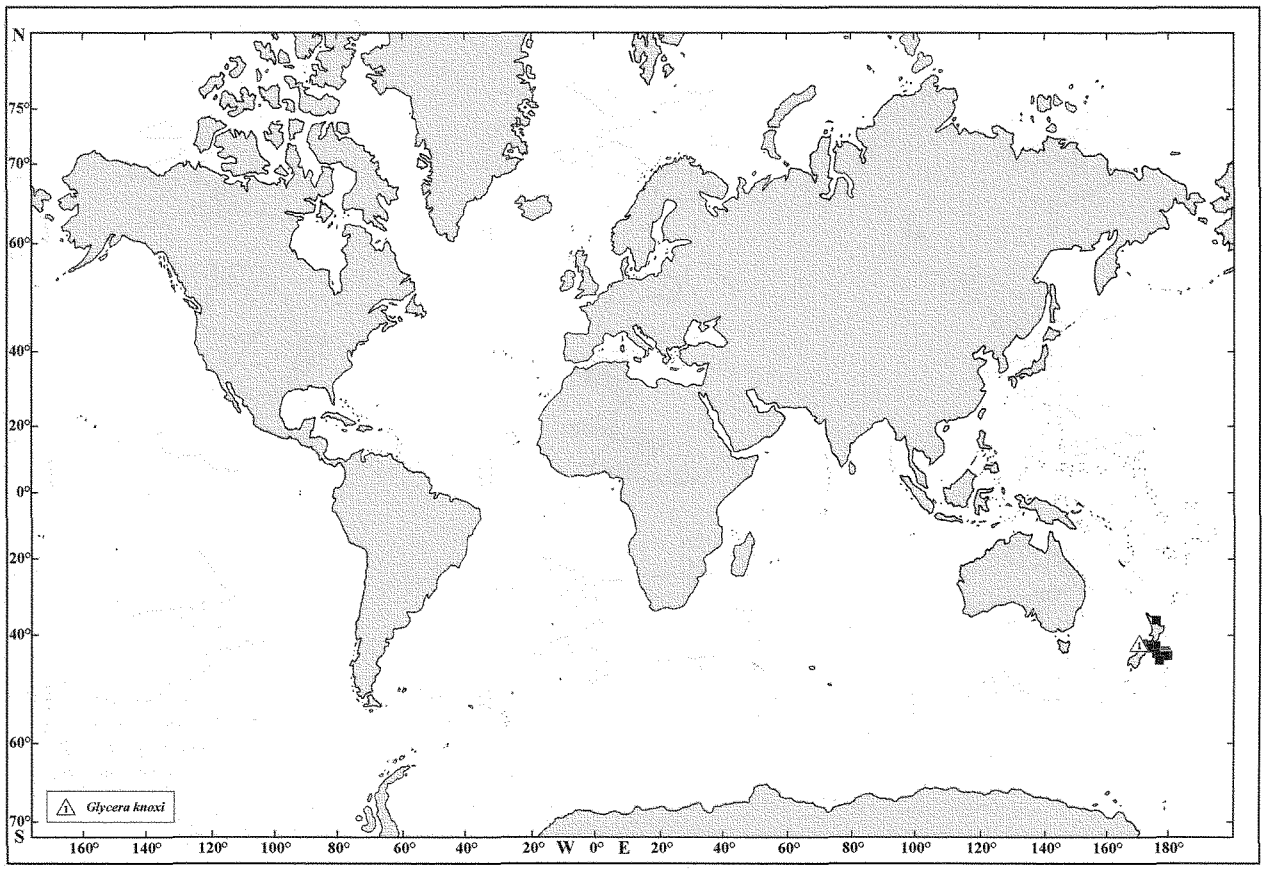

Fig. 63: Distribution of *Glycera knoxi* KIRKEGAARD 1995.

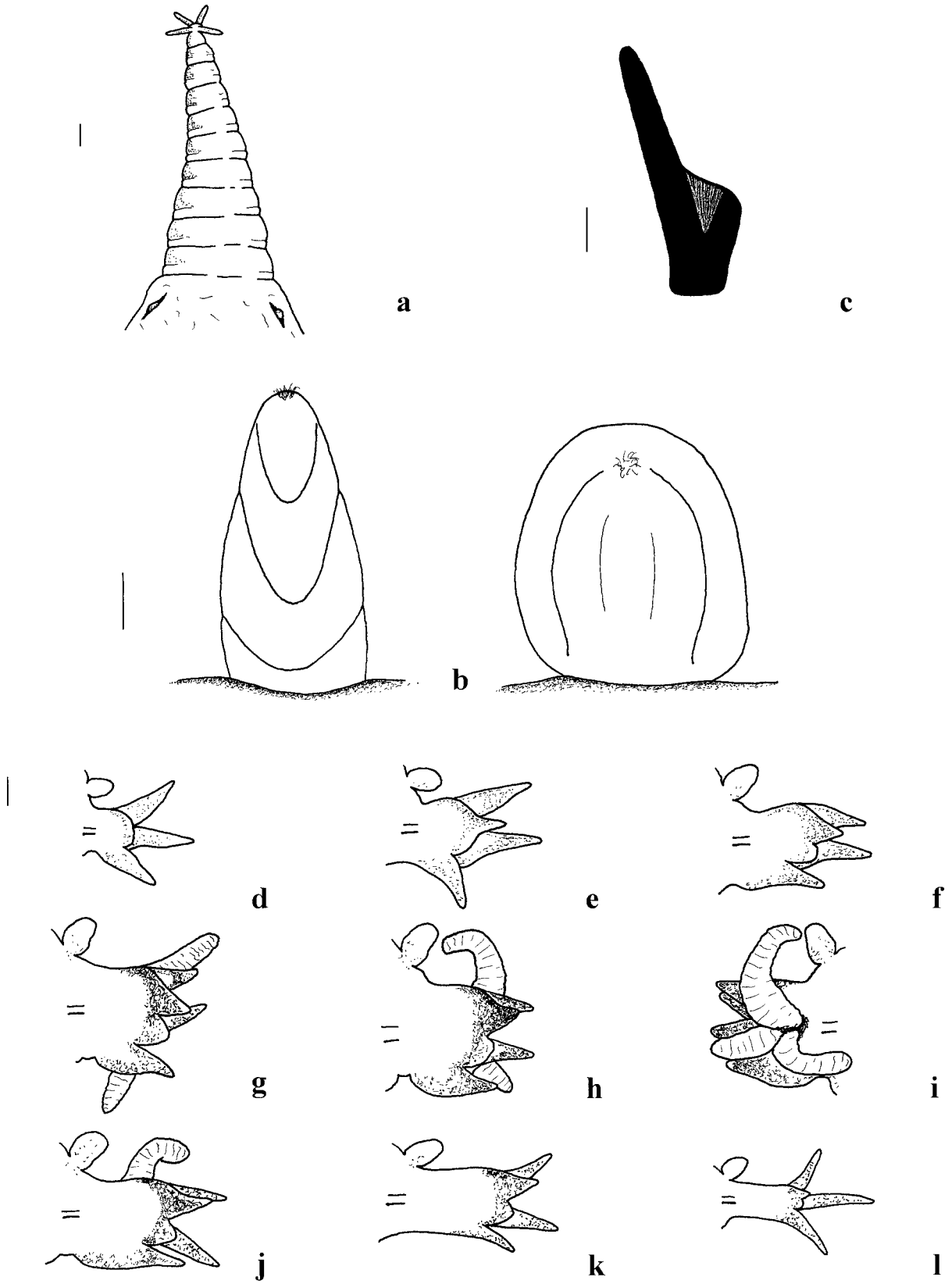

Fig. 64: *Glycera macintoshi* GRUBE 1877. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-h, j-l: posterior, i: anterior view; d-l: chaetae not shown; a-l: SMF 9480; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

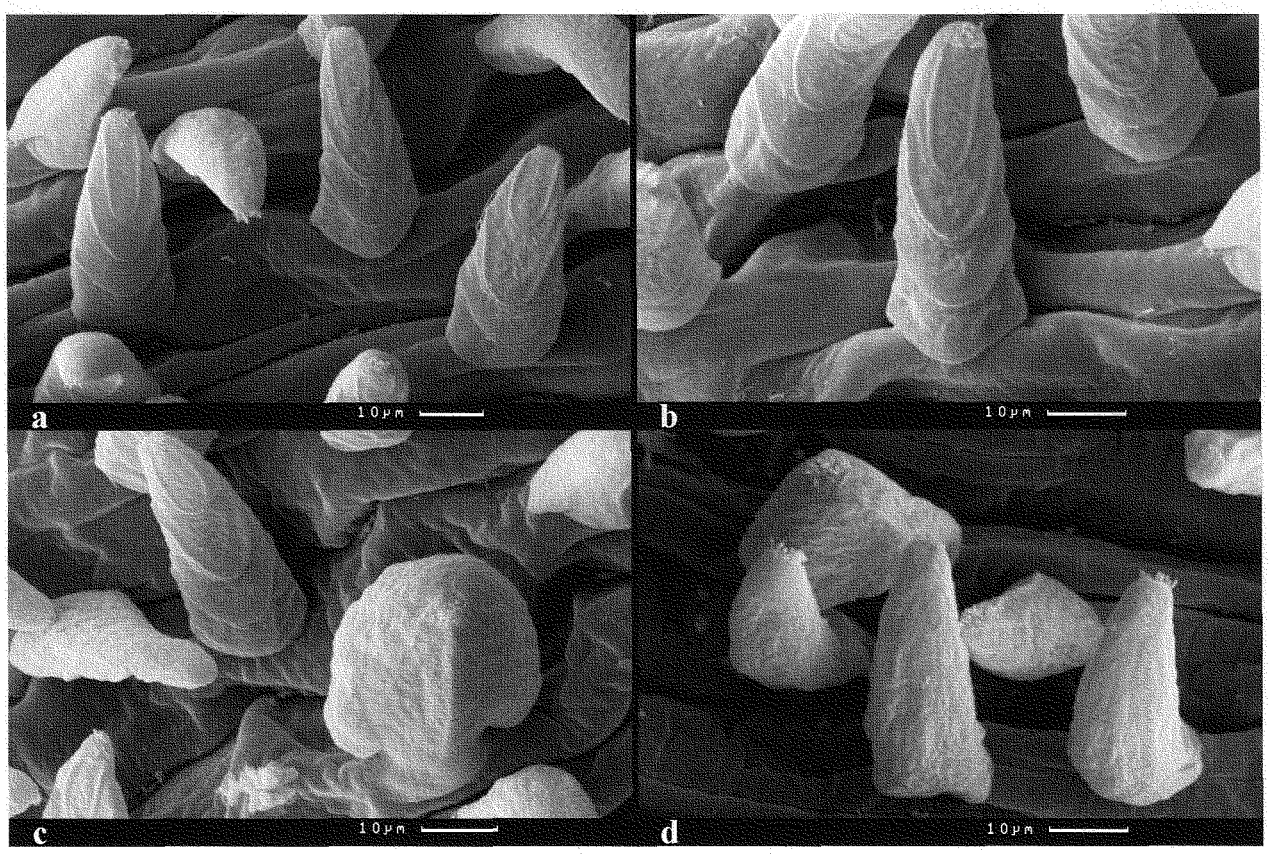

Fig. 65: *Glycera macintoshi* GRUBE 1877. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; WAM 69-96)

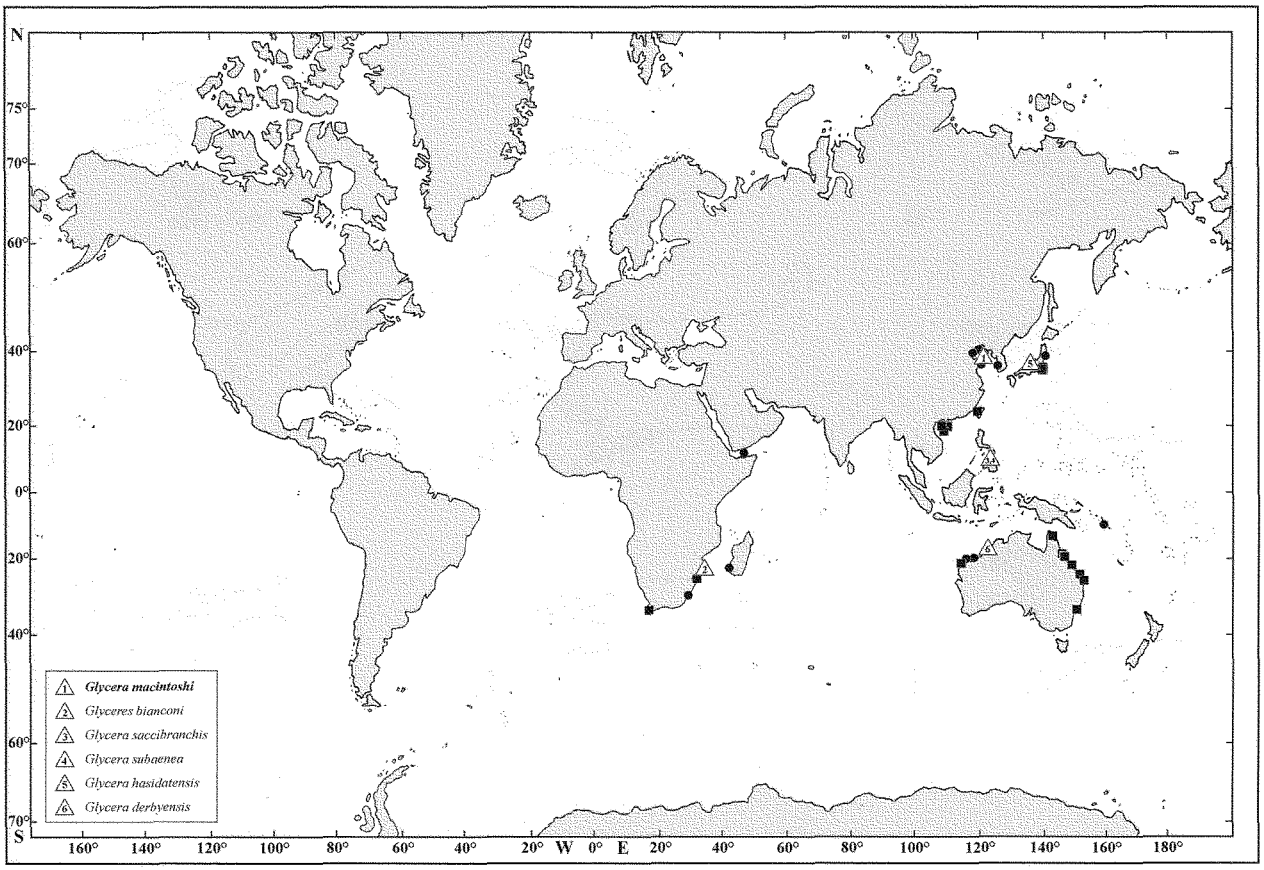

Fig. 66: Distribution of *Glycera macintoshi* GRUBE 1877.

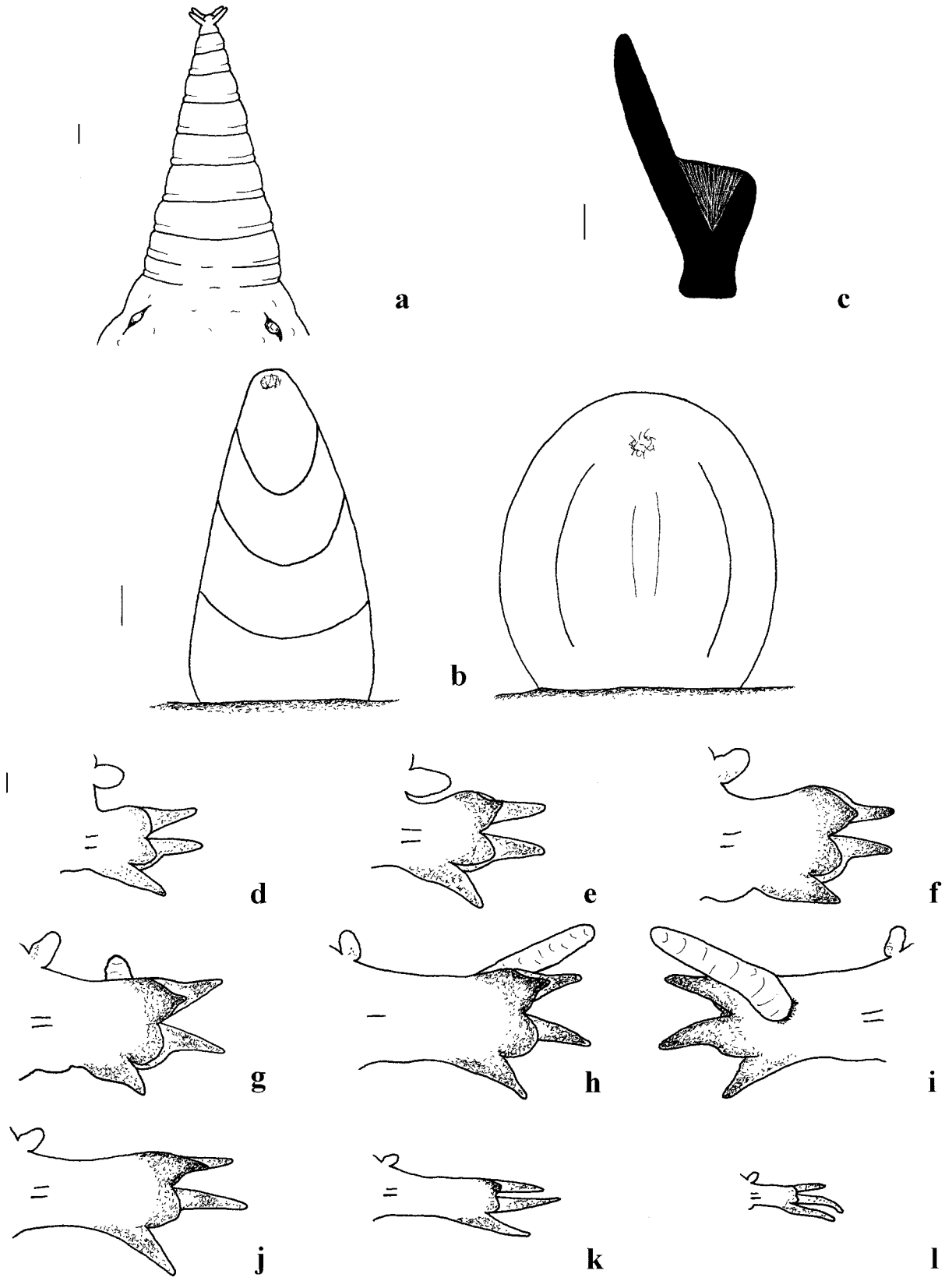

Fig. 67: *Glycera nicobarica* GRUBE 1868. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-h, j-l: posterior, i: anterior view; d-l: chaetae not shown; a-l: AM W199682; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

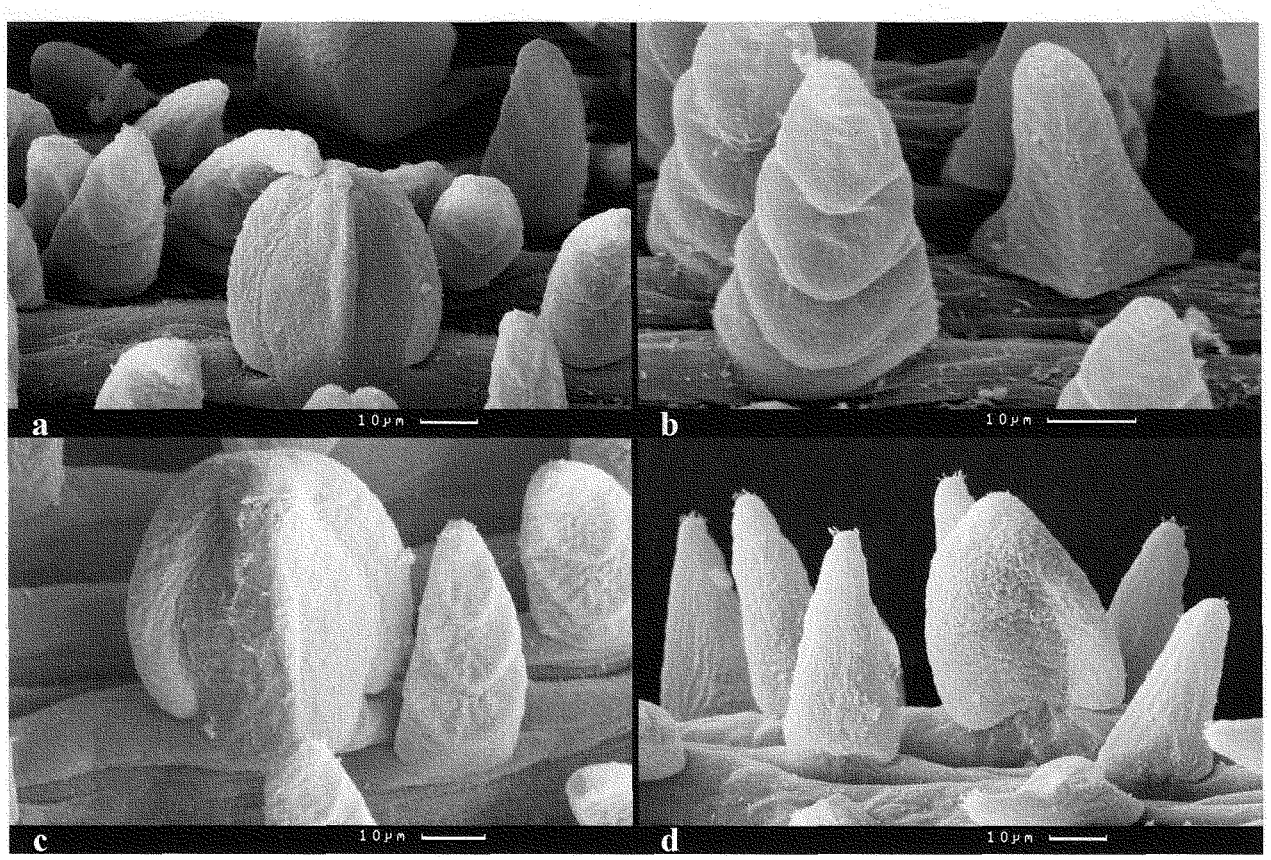

Fig. 68: *Glycera nicobarica* GRUBE 1868. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, c-d: SMF 9507, b: SMF 9511)

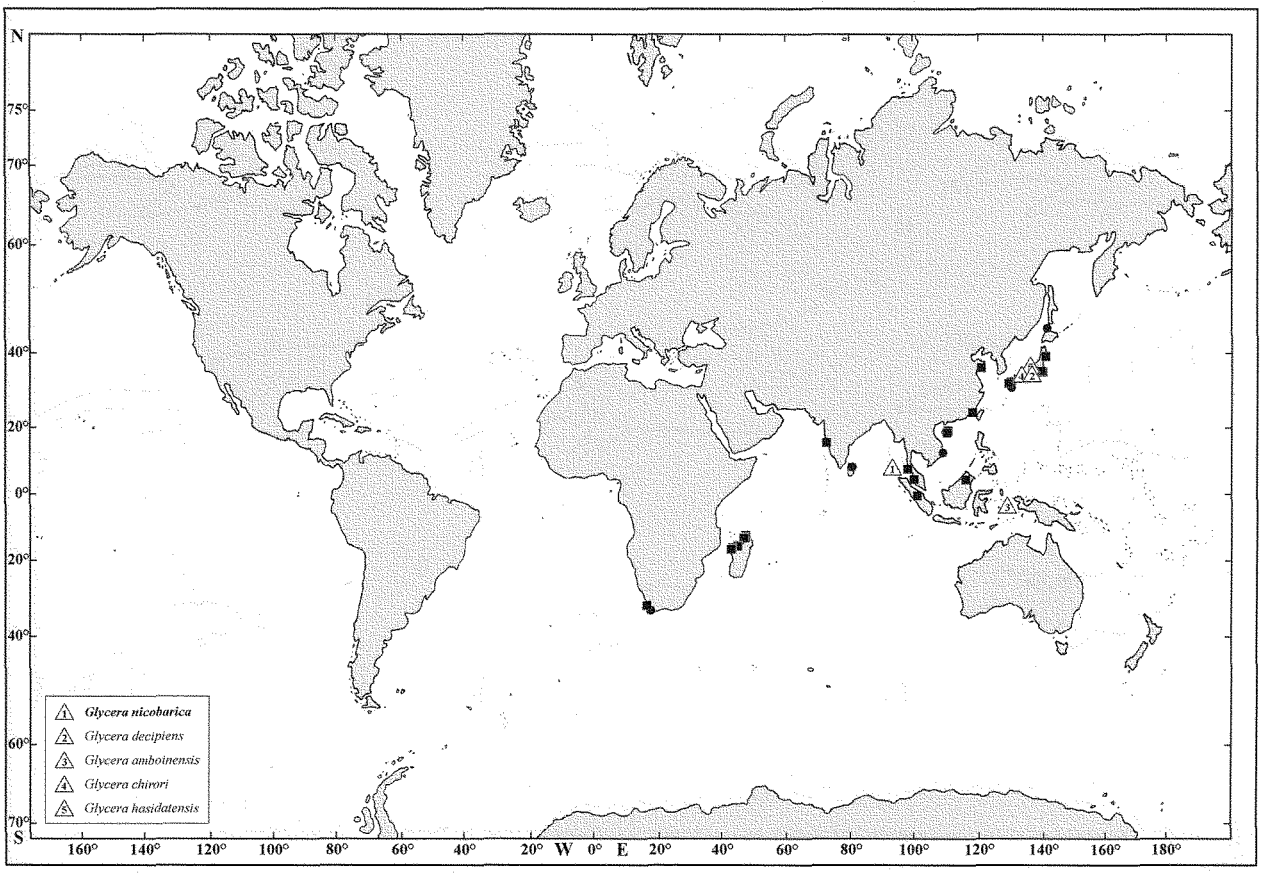

Fig. 69: Distribution of *Glycera nicobarica* GRUBE 1868.

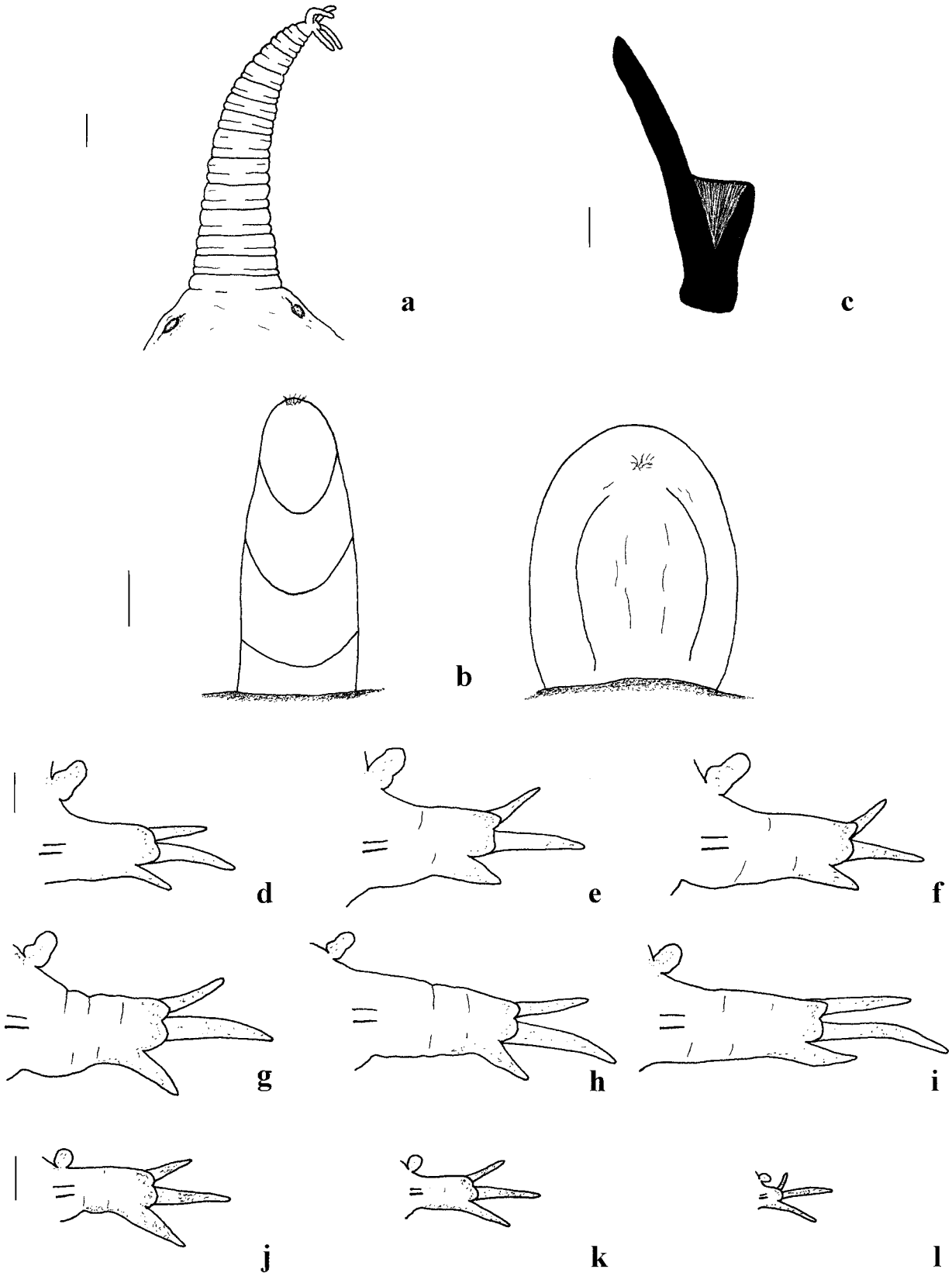

Fig. 70: *Glycera madagascariensis* BÖGGEMANN & FIEGE 2001. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-c, j-l: SMF 9468, d-i: SMF 9475; scale bars: a, d-l = 0.1 mm, b = 0.01 mm, c = 0.05 mm)

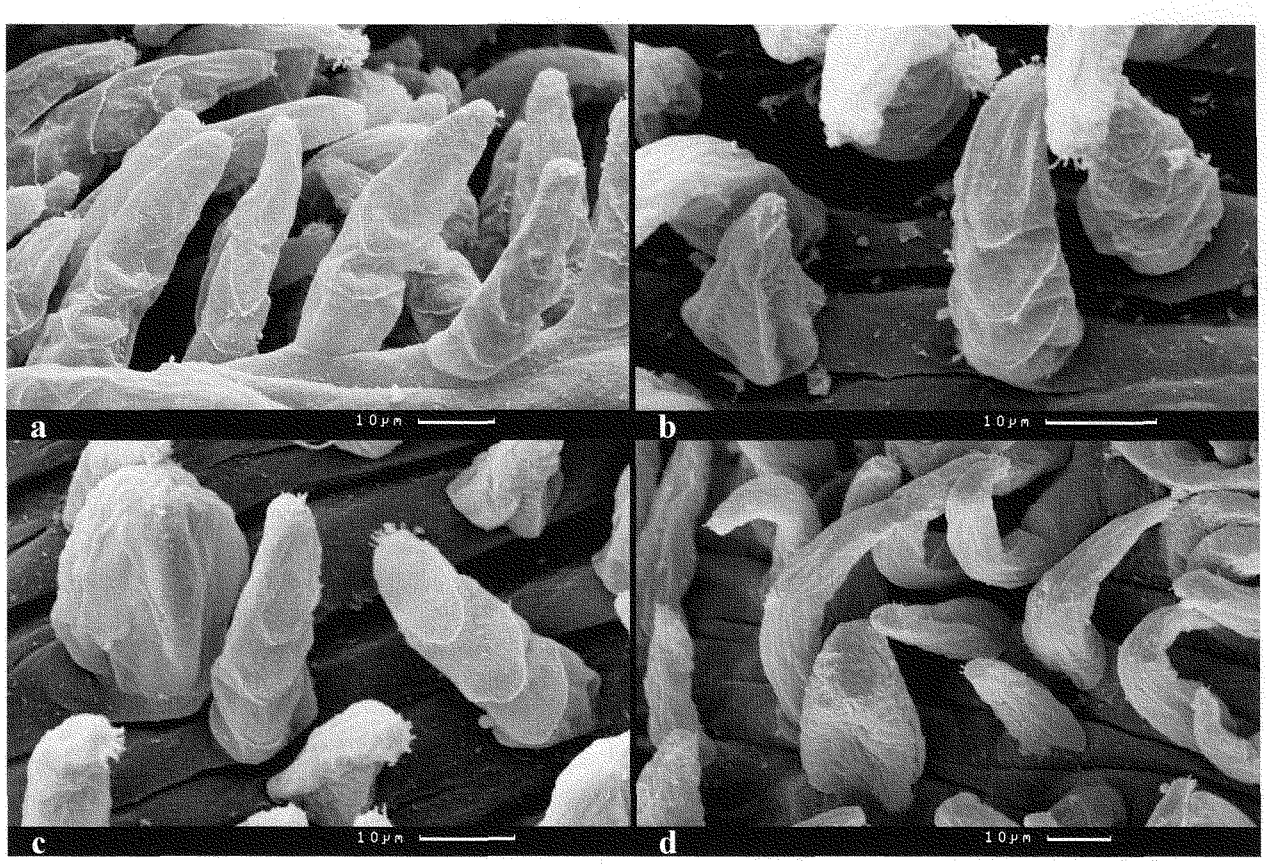

Fig. 71: *Glycera madagascariensis* BÖGGEMANN & FIEGE 2001. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: SMF 9469)

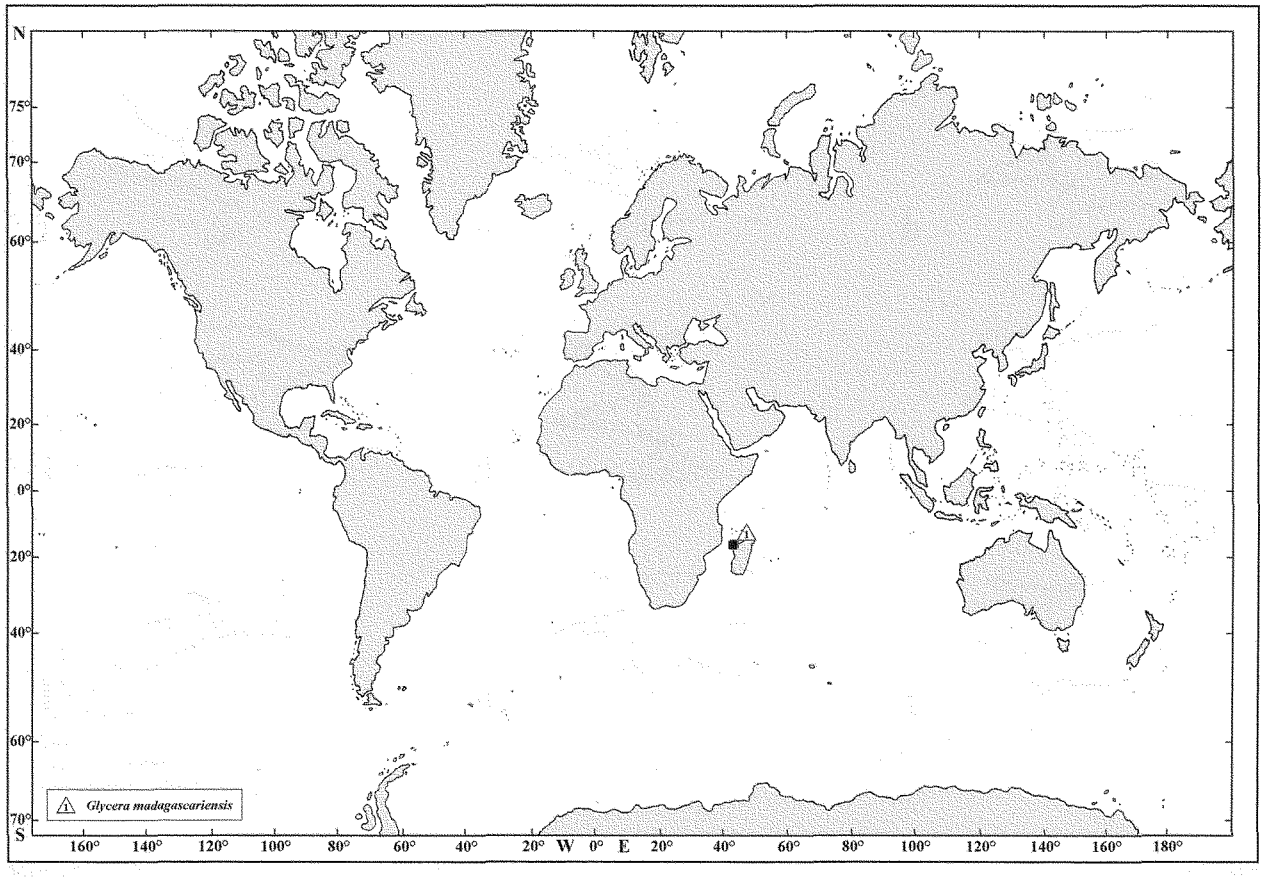

Fig. 72: Distribution of *Glycera madagascariensis* BÖGGEMANN & FIEGE 2001.

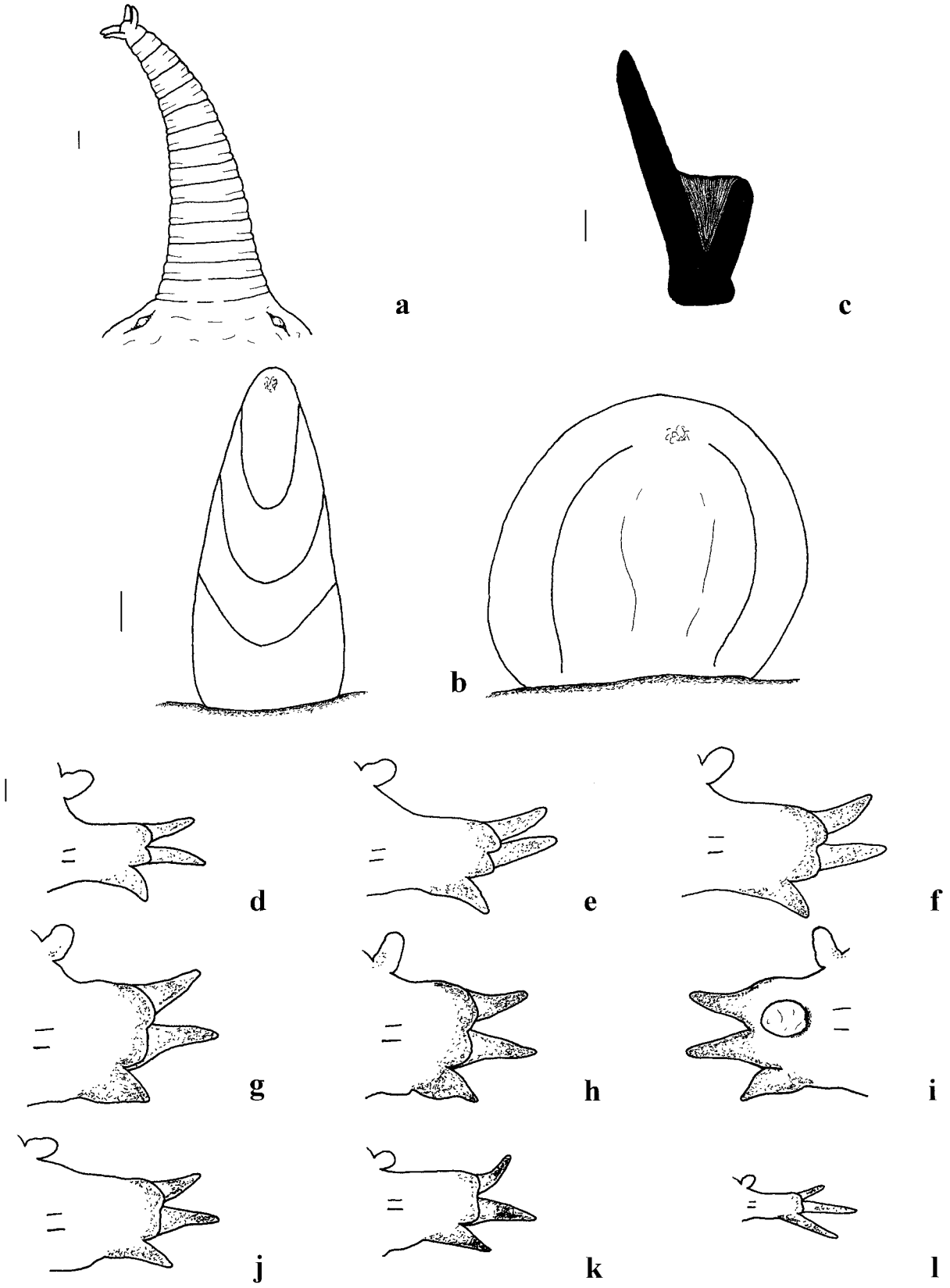

Fig. 73: *Glycera fallax* QUATREFAGES 1850. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-h, j-l: posterior, i: anterior view; d-l: chaetae not shown; a-l: SMF 9513; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

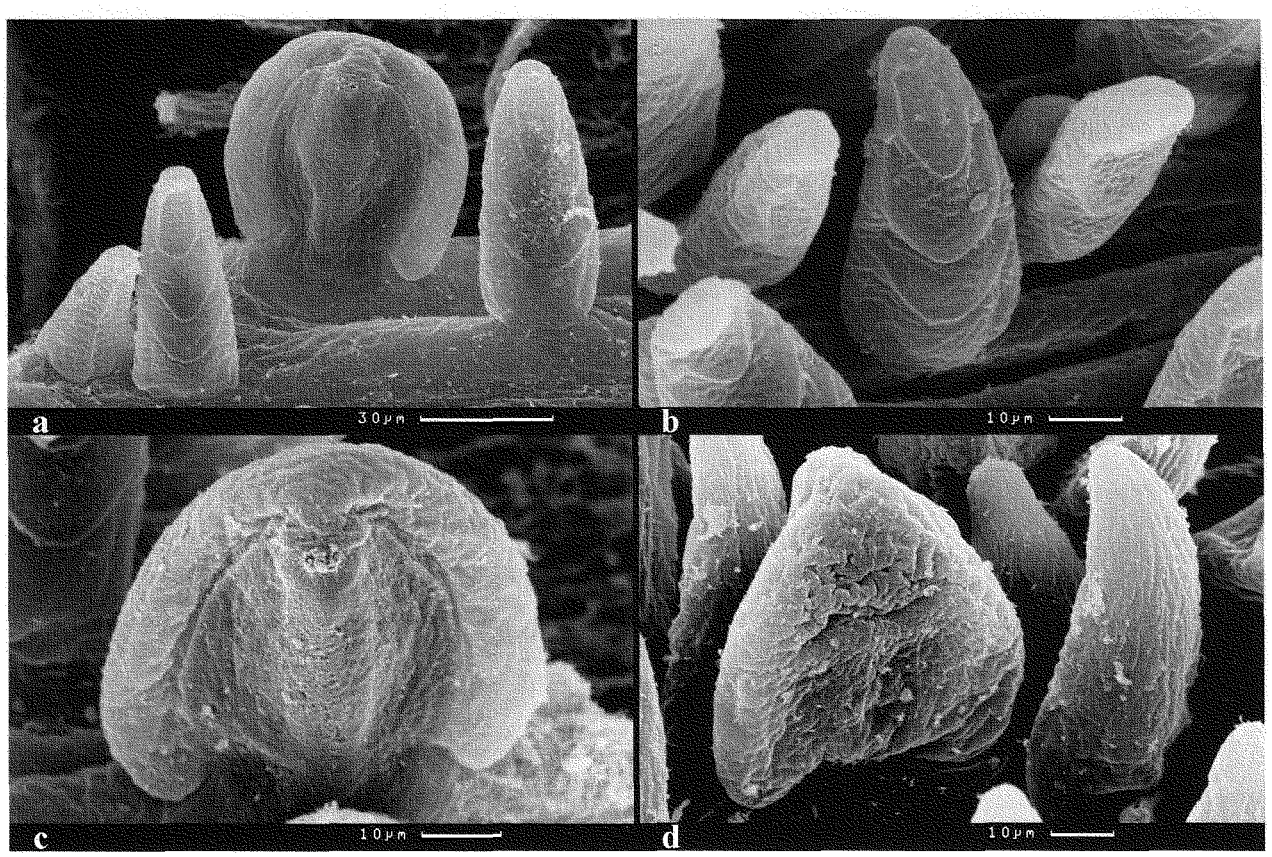

Fig. 74: *Glycera fallax* QUATREFAGES 1850. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: SMF 9513)

Fig. 75: Distribution of *Glycera fallax* QUATREFAGES 1850.

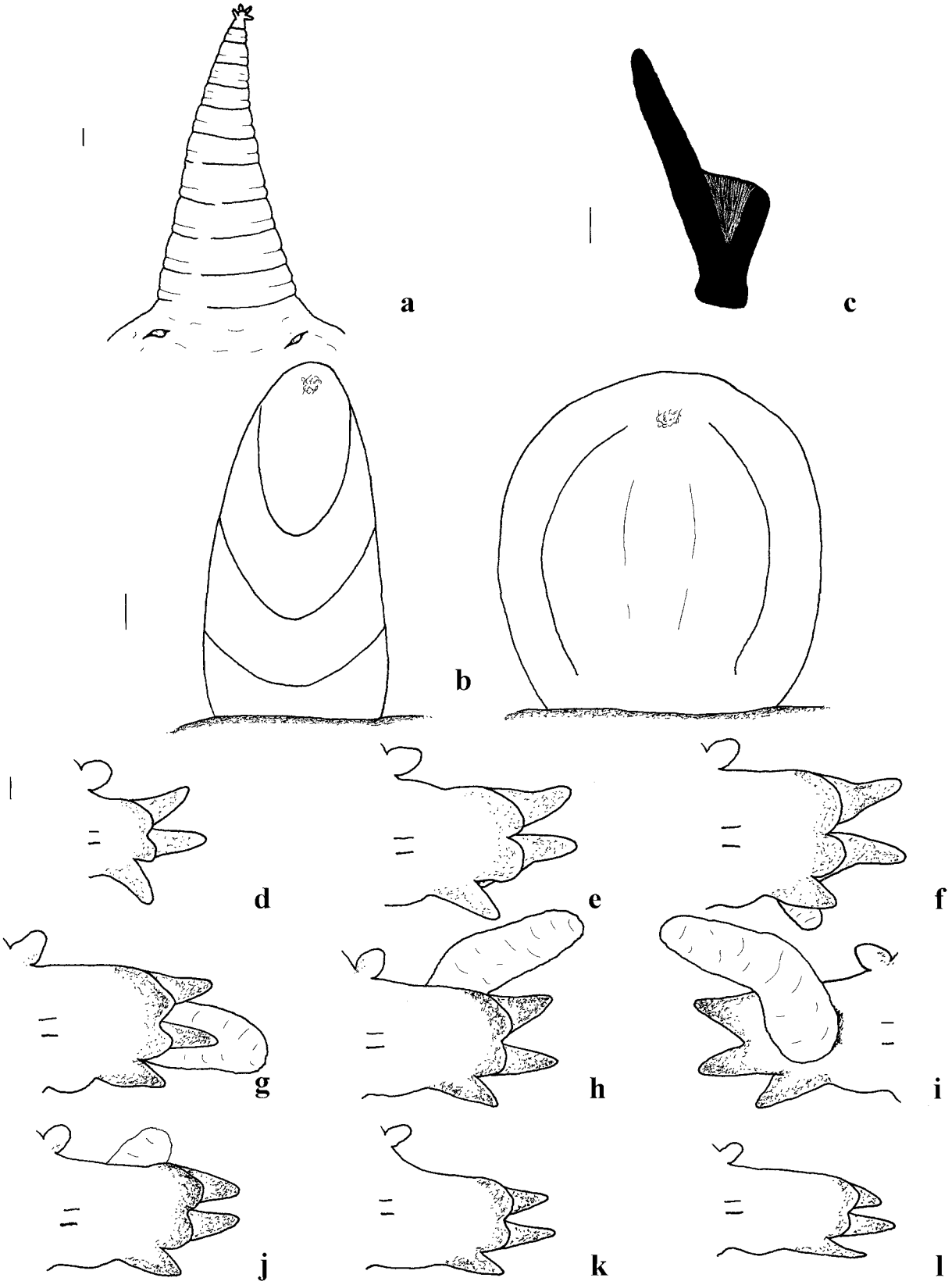

Fig. 76: *Glycera sagittariae* MCINTOSH 1885. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-h, j-l: posterior, i: anterior view; d-l: chaetae not shown; a-l: ZMB 2963; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

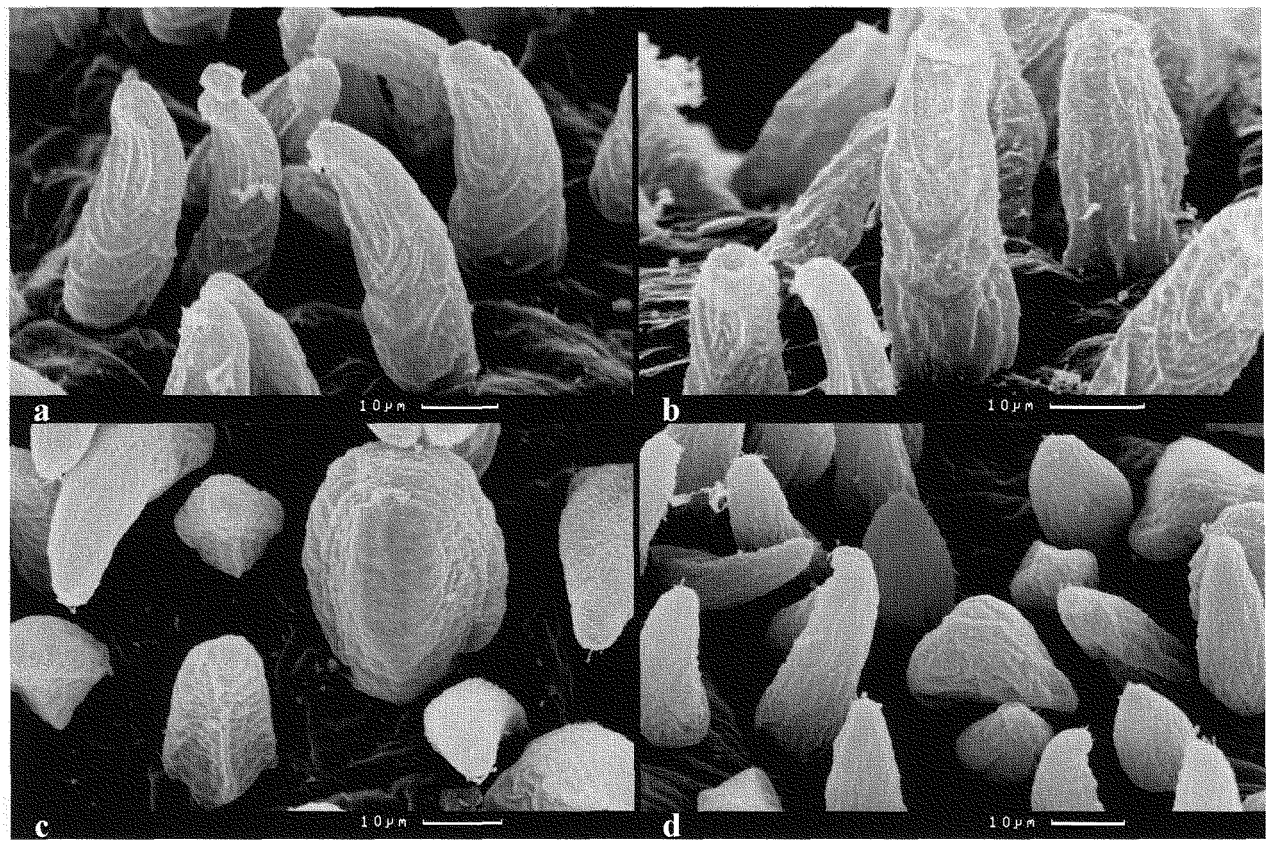

Fig. 77: *Glycera sagittariae* McIntosh 1885. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: USNM 168386)

Fig. 78: Distribution of *Glycera sagittariae* McIntosh 1885.

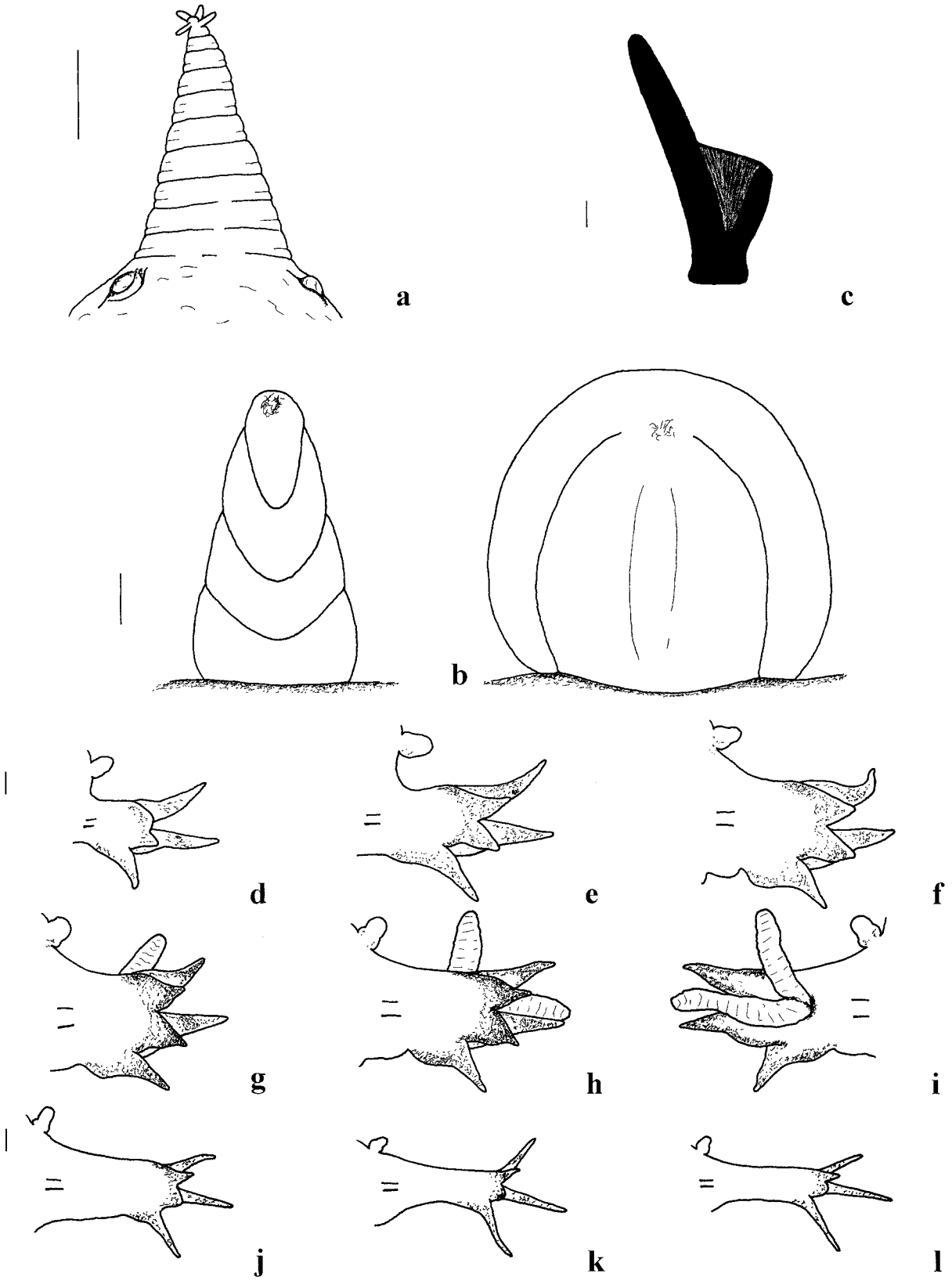

Fig. 79: *Glycera unicornis* SAVIGNY 1818. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-h, j-l: posterior, i: anterior view; d-l: chaetae not shown; a, d-i: SMF 9537, b, j-l: SMF 9538, c: SMF 9518; scale bars: a = 0.5 mm, b = 0.01 mm, c-l = 0.1 mm)

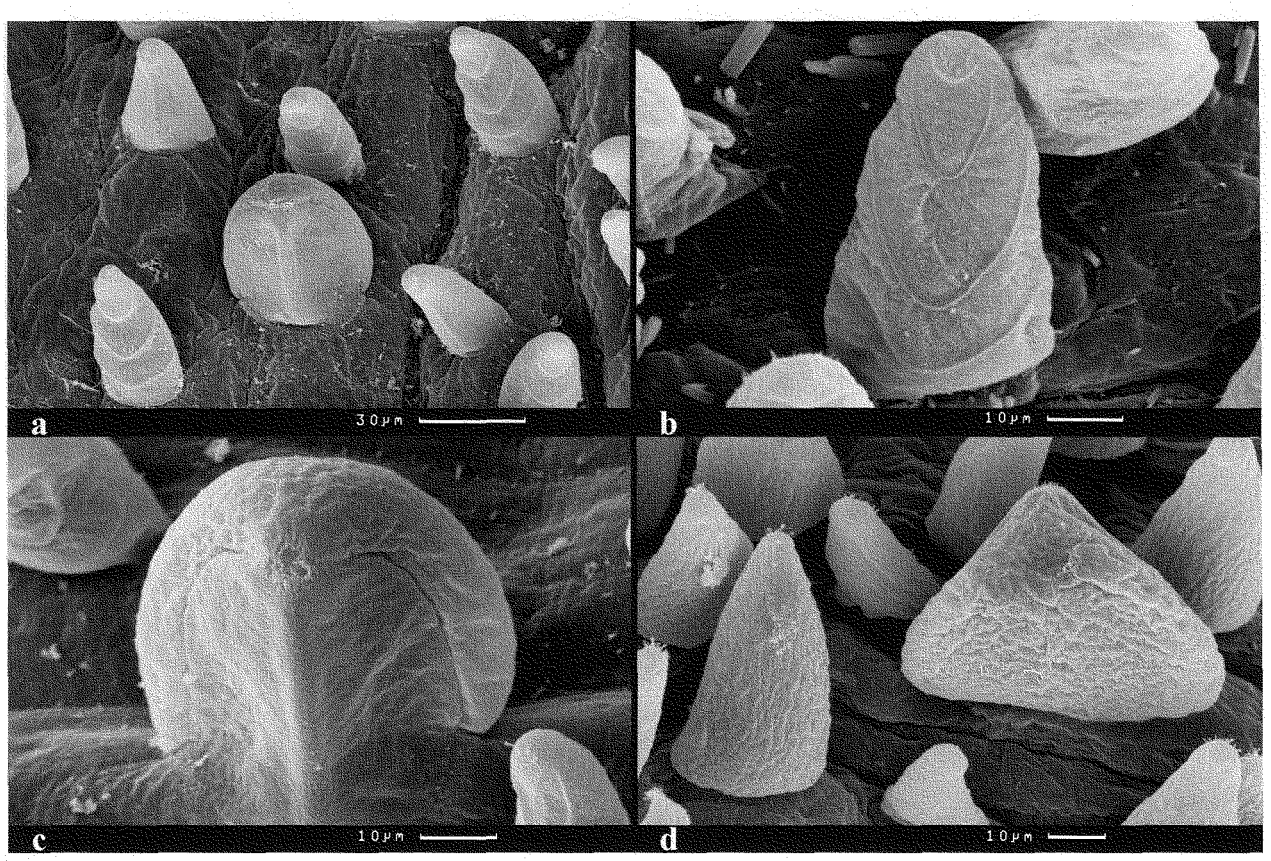

Fig. 80: *Glycera unicornis* SAVIGNY 1818. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: SMF 9518, b: SAM A20478, c: SMF 9520, d: SMF 9521)

Fig. 81: Distribution of *Glycera unicornis* SAVIGNY 1818.

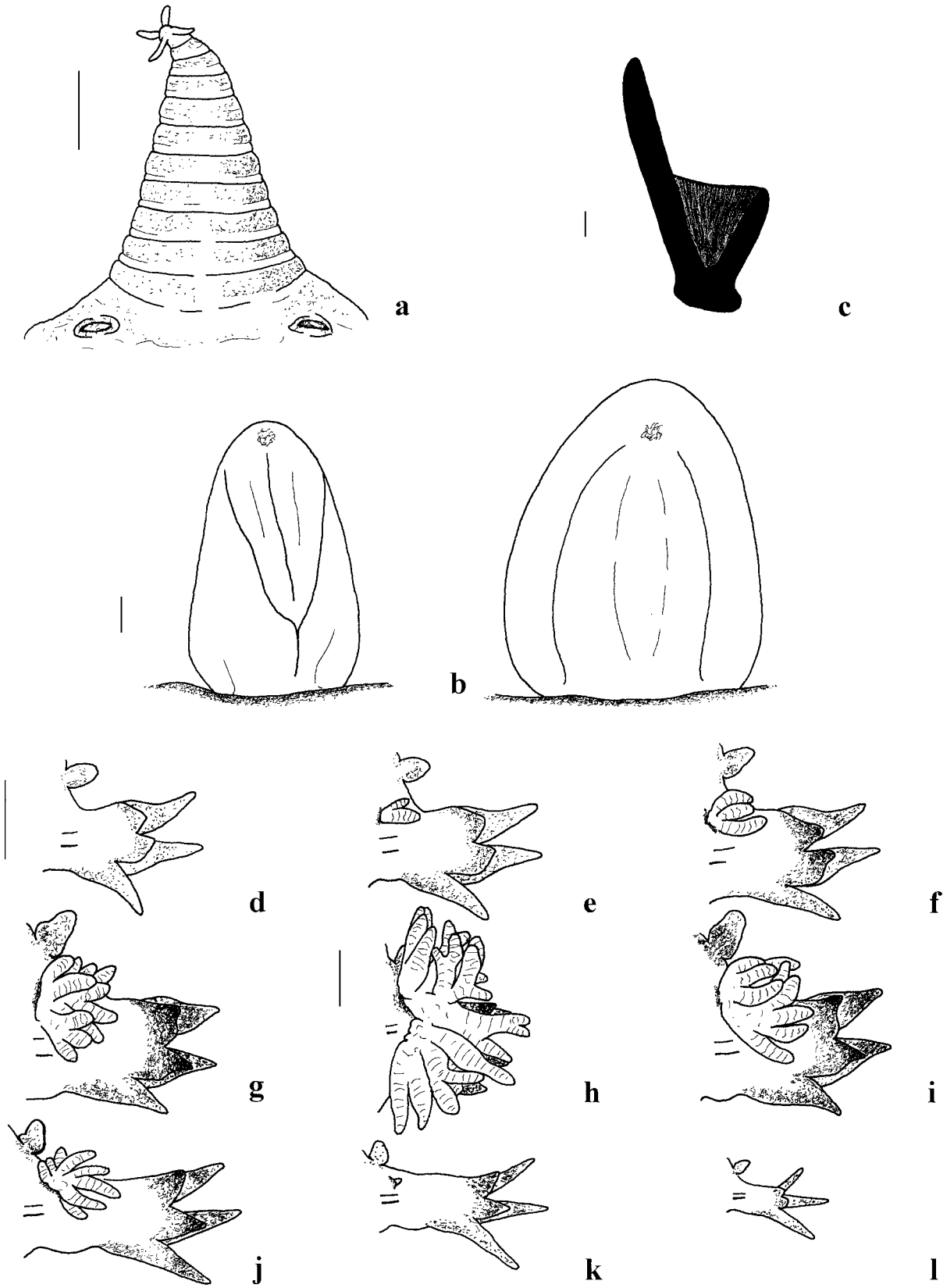

Fig. 82: *Glycera ovigera* SCHMARDA 1861. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a, c-g, i-l: AM W7564, b: WAM 480-75, h: ZMB 4863; scale bars: a, d-l = 0.5 mm, b = 0.01 mm, c = 0.1 mm)

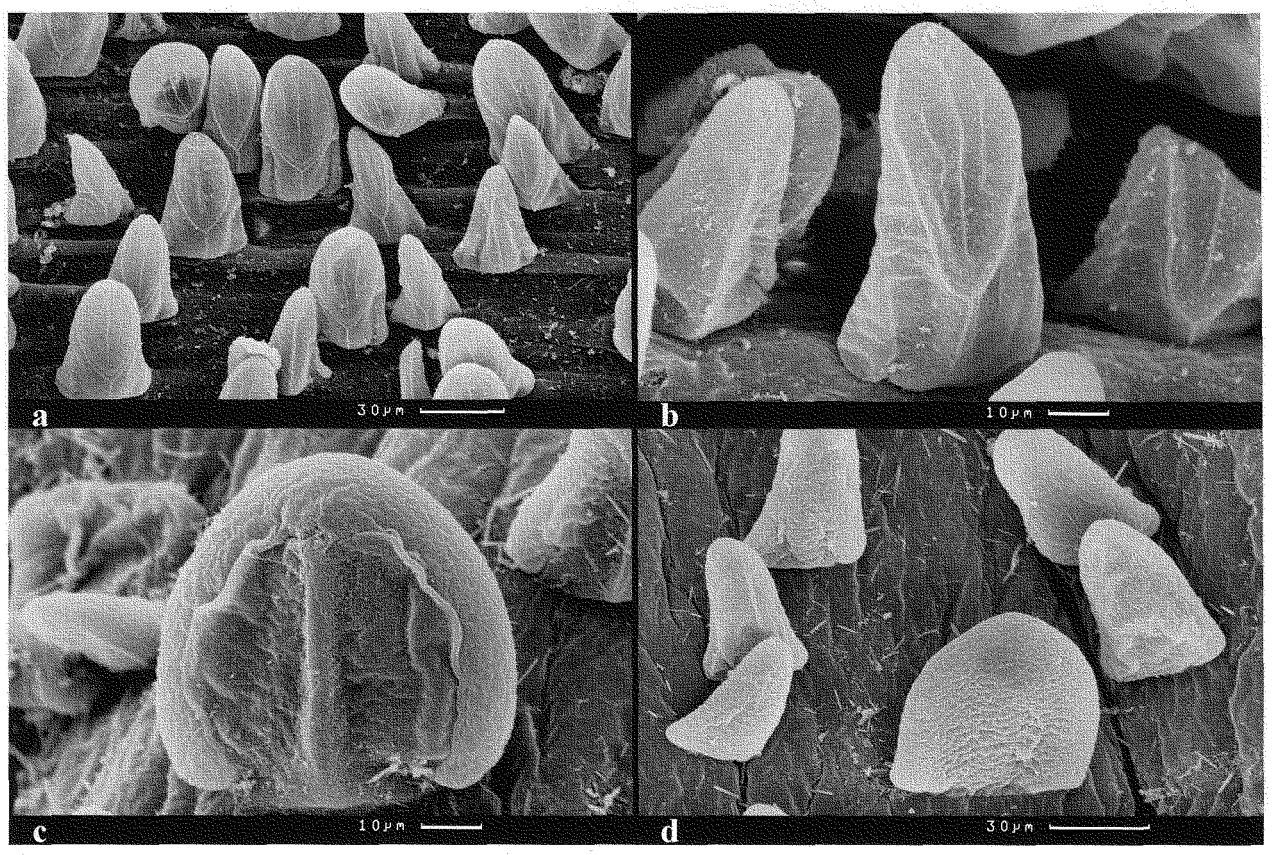

Fig. 83: *Glycera ovigera* SCHMARDA 1861. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: WAM 80-76, b: MV F 80186, c-d: WAM 480-75)

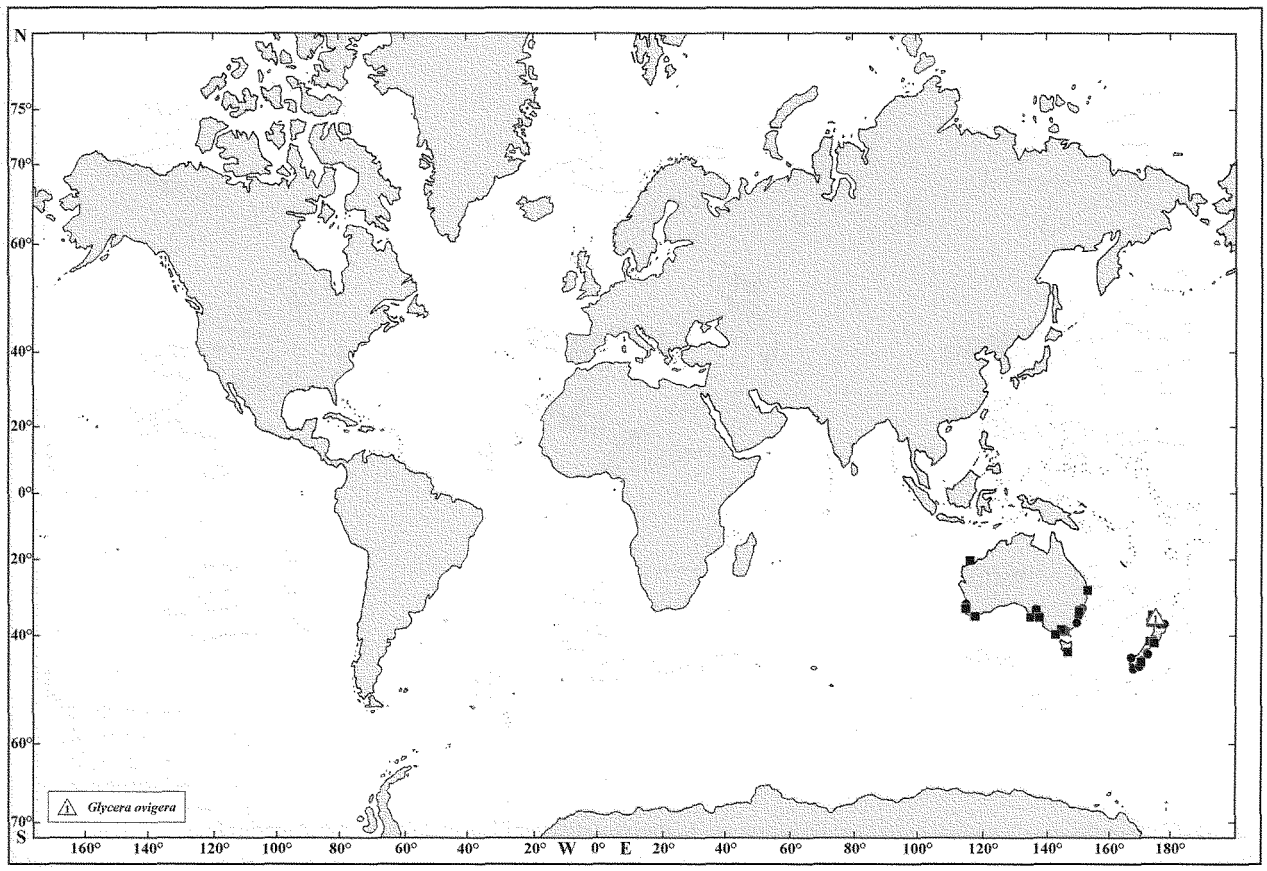

Fig. 84: Distribution of *Glycera ovigera* SCHMARDA 1861.

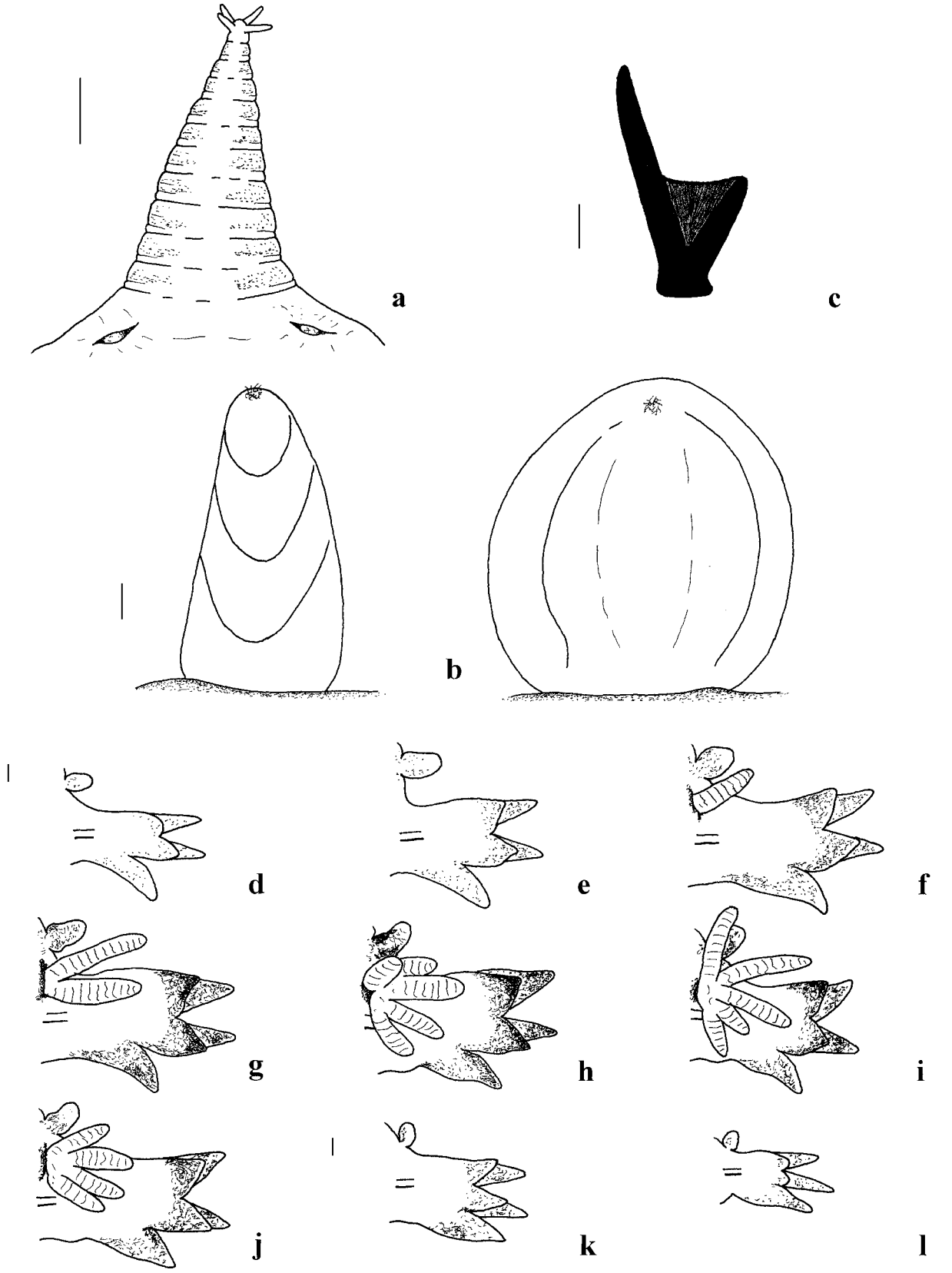

Fig. 85: *Glycera pacifica* KINBERG 1865. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a, d-j: LACM-AHF Poly 1852, b, k-l: MCZ 2296, c: SSM 504; scale bars: a = 0.5 mm, b = 0.01 mm, c-l = 0.1 mm)

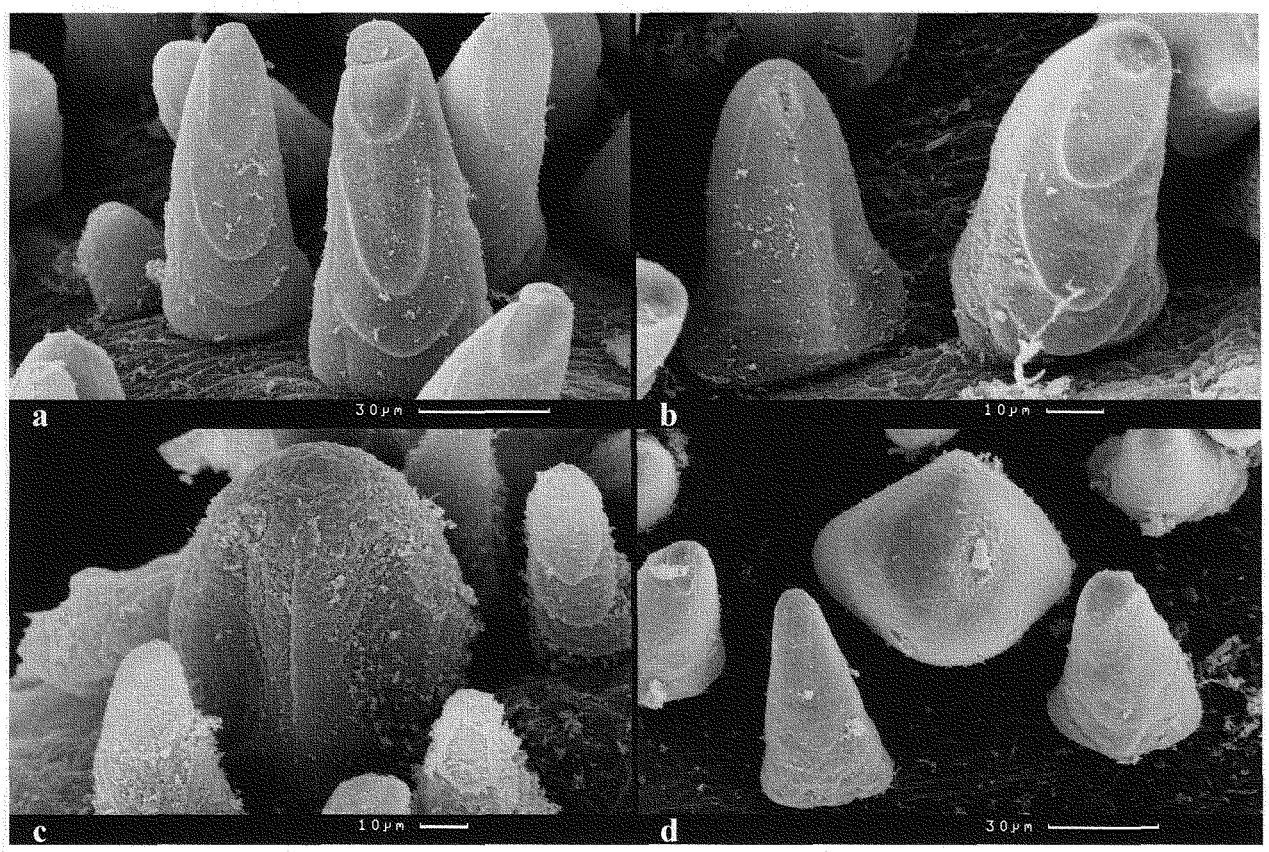

Fig. 86: *Glycera pacifica* KINBERG 1865. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: USNM 35942)

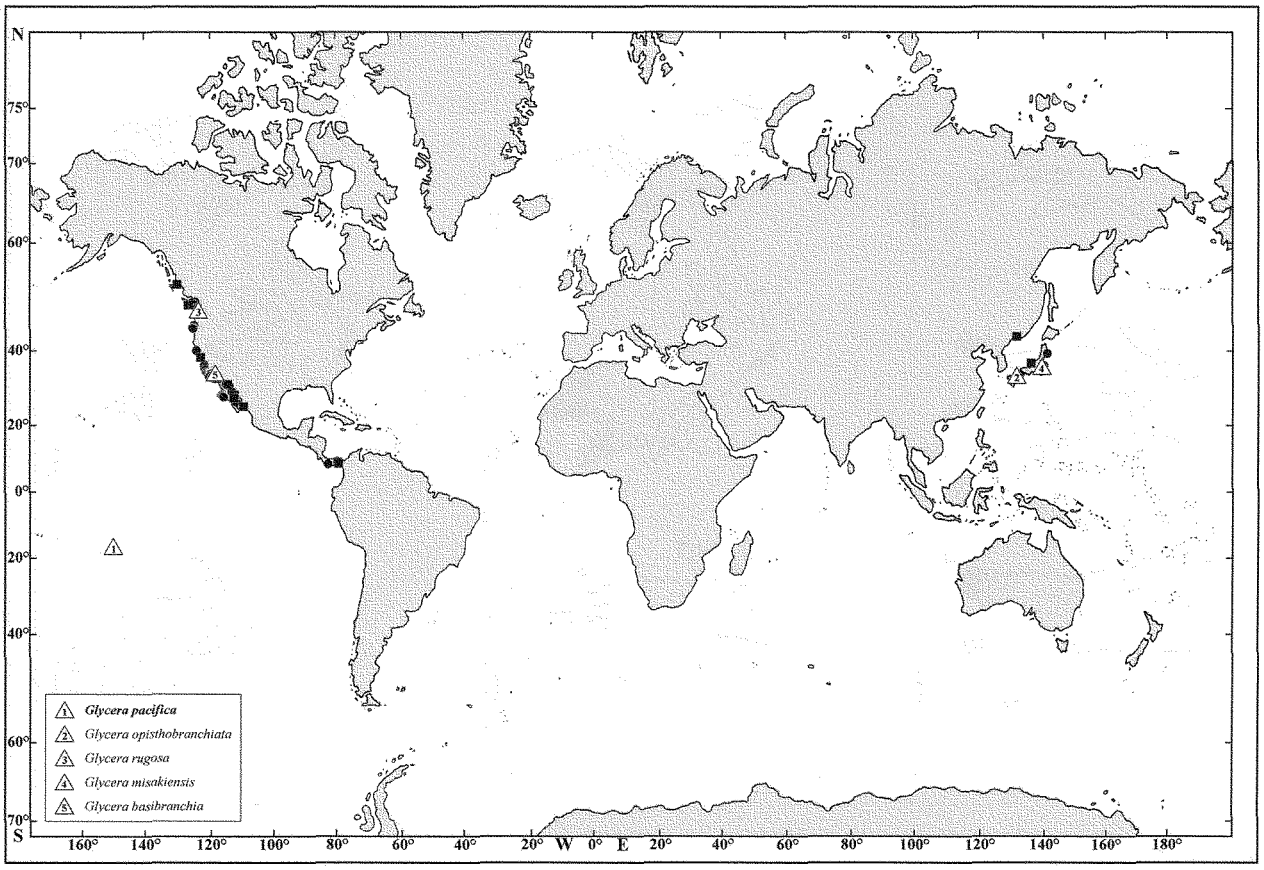

Fig. 87: Distribution of *Glycera pacifica* KINBERG 1865.

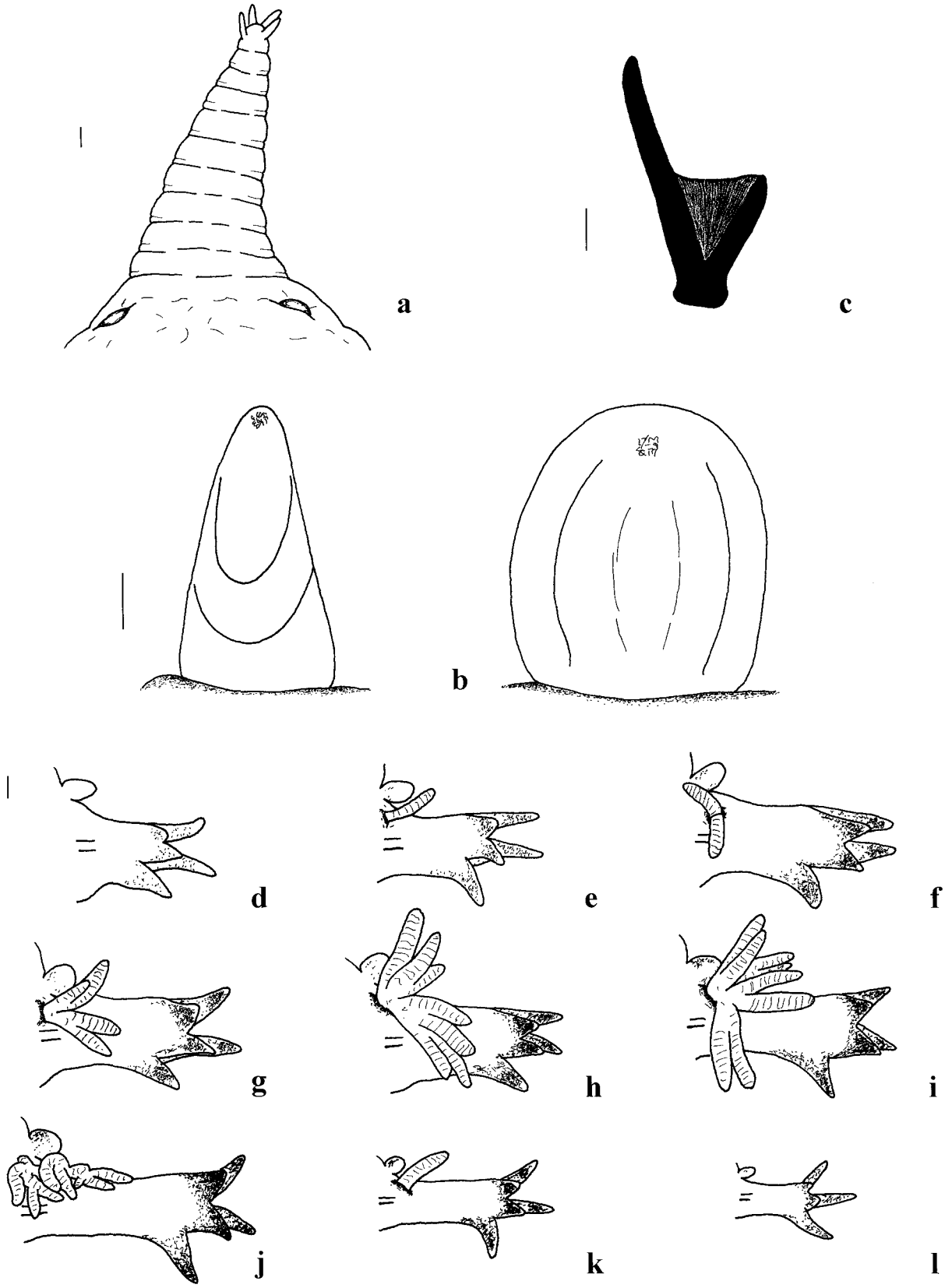

Fig. 88: *Glycera americana* LEIDY 1855. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: SMF 9587; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

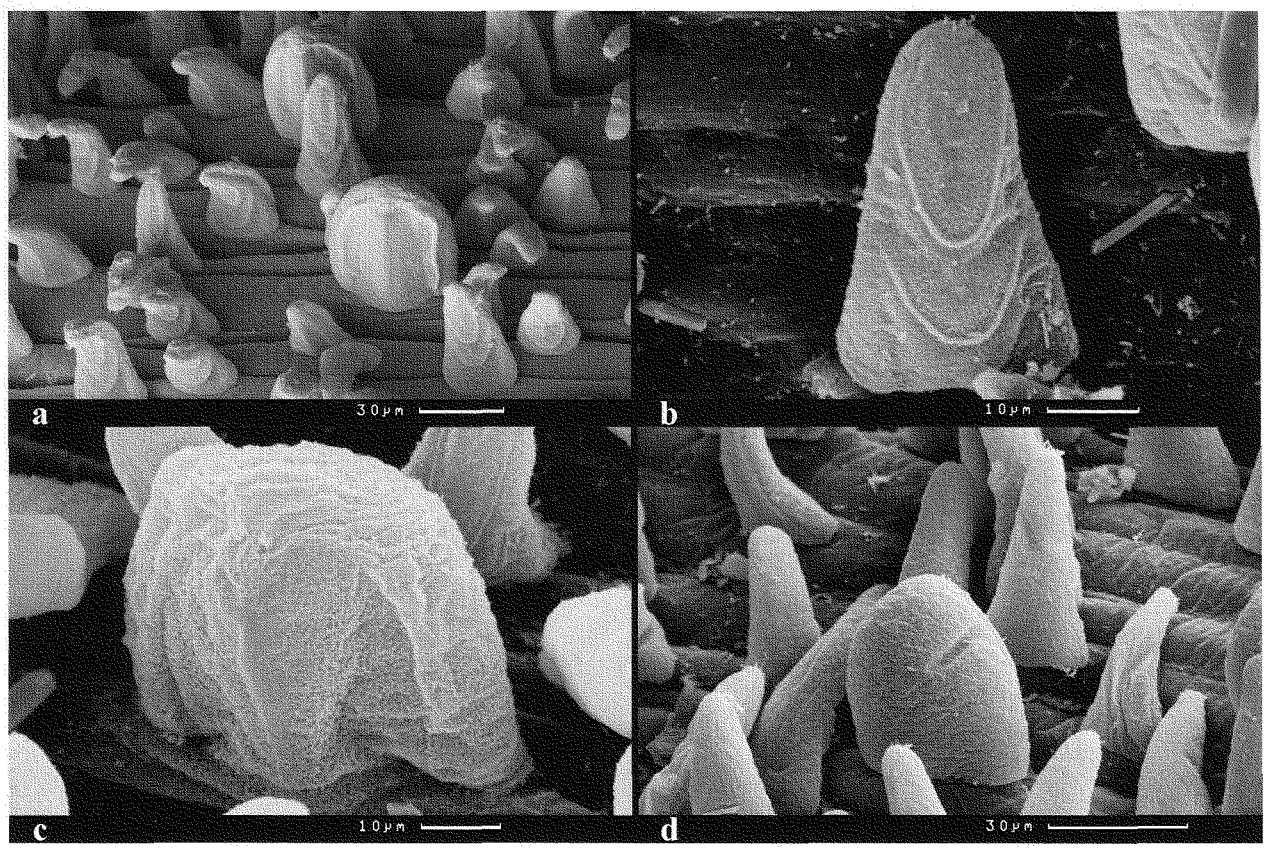

Fig. 89: *Glycera americana* LEIDY 1855. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, d: UCC FN-8409-M:3, b-c: USNM 16056)

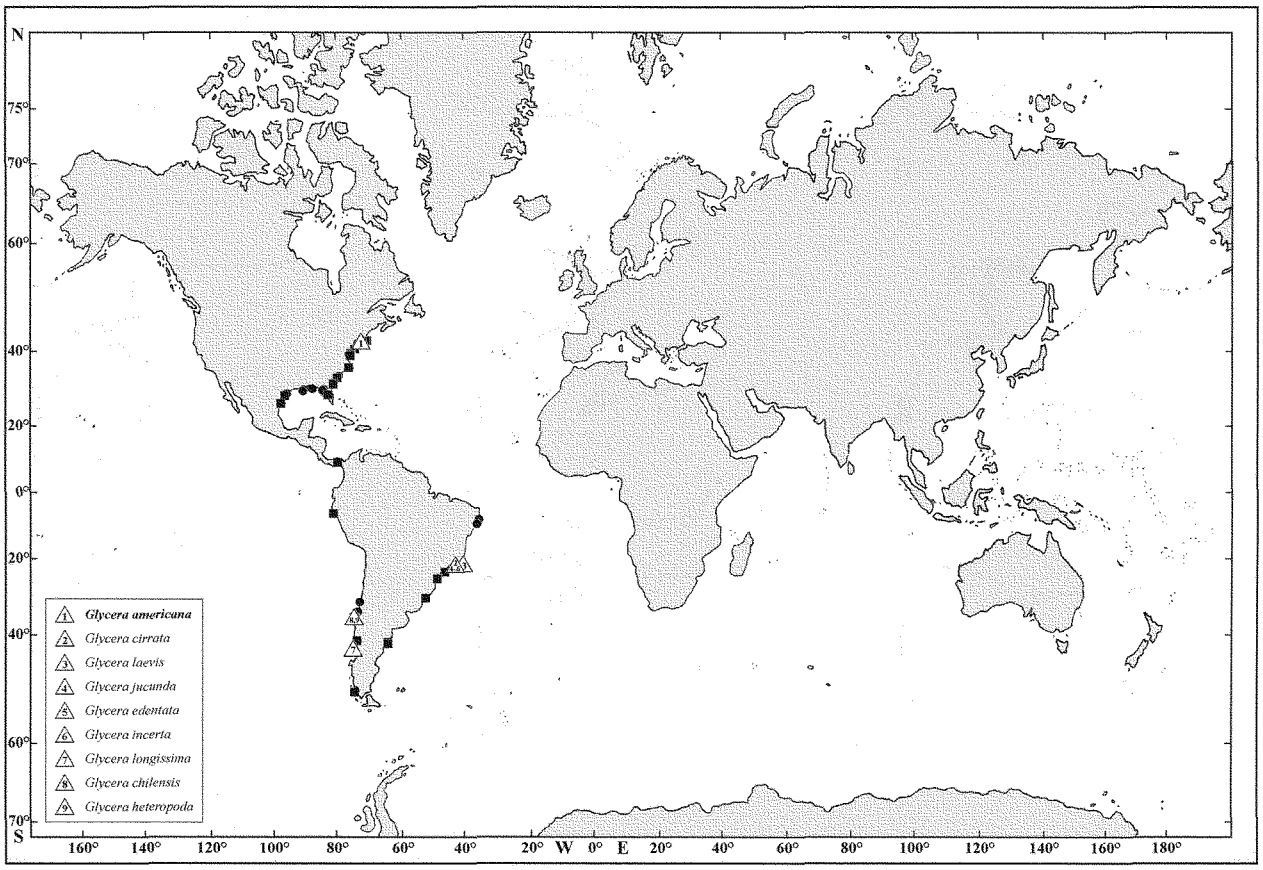

Fig. 90: Distribution of *Glycera americana* LEIDY 1855.

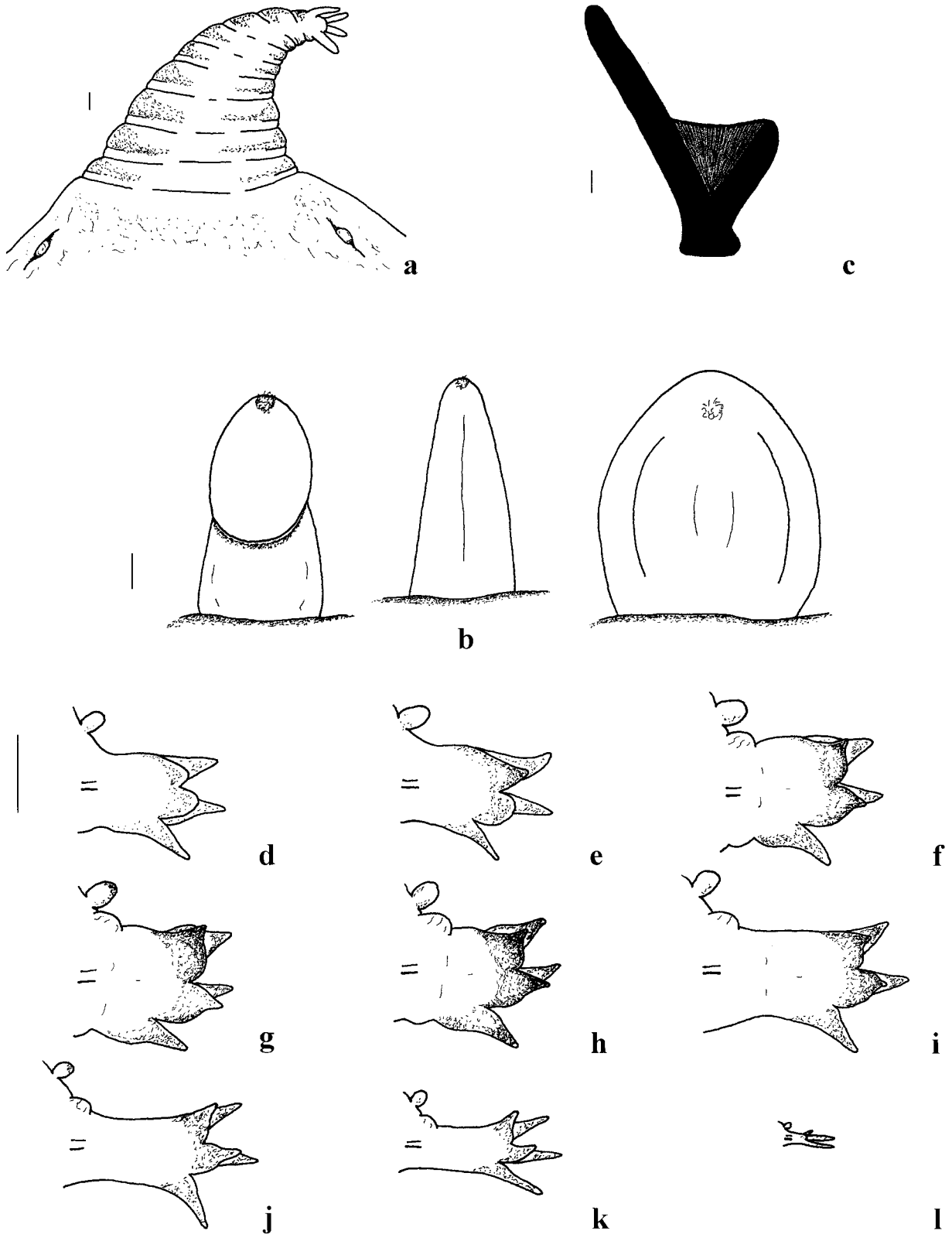

Fig. 91: *Glycera lamelliformis* MCINTOSH 1885. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: NZOI C218; scale bars: a, c = 0.1 mm, b = 0.01 mm, d-l = 0.5 mm)

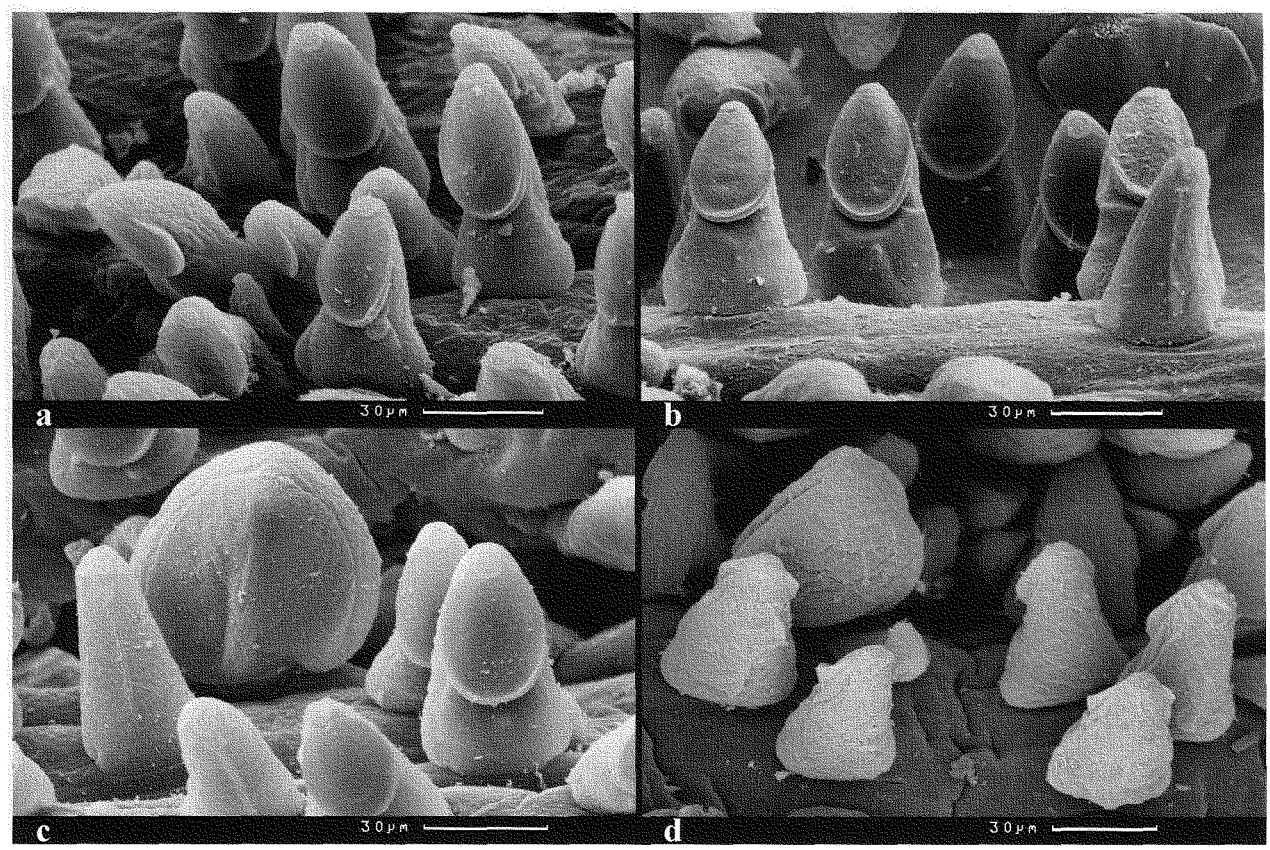

Fig. 92: *Glycera lamelliformis* McINTOSH 1885. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, c: NZOI T509, b, d: NZOI T491)

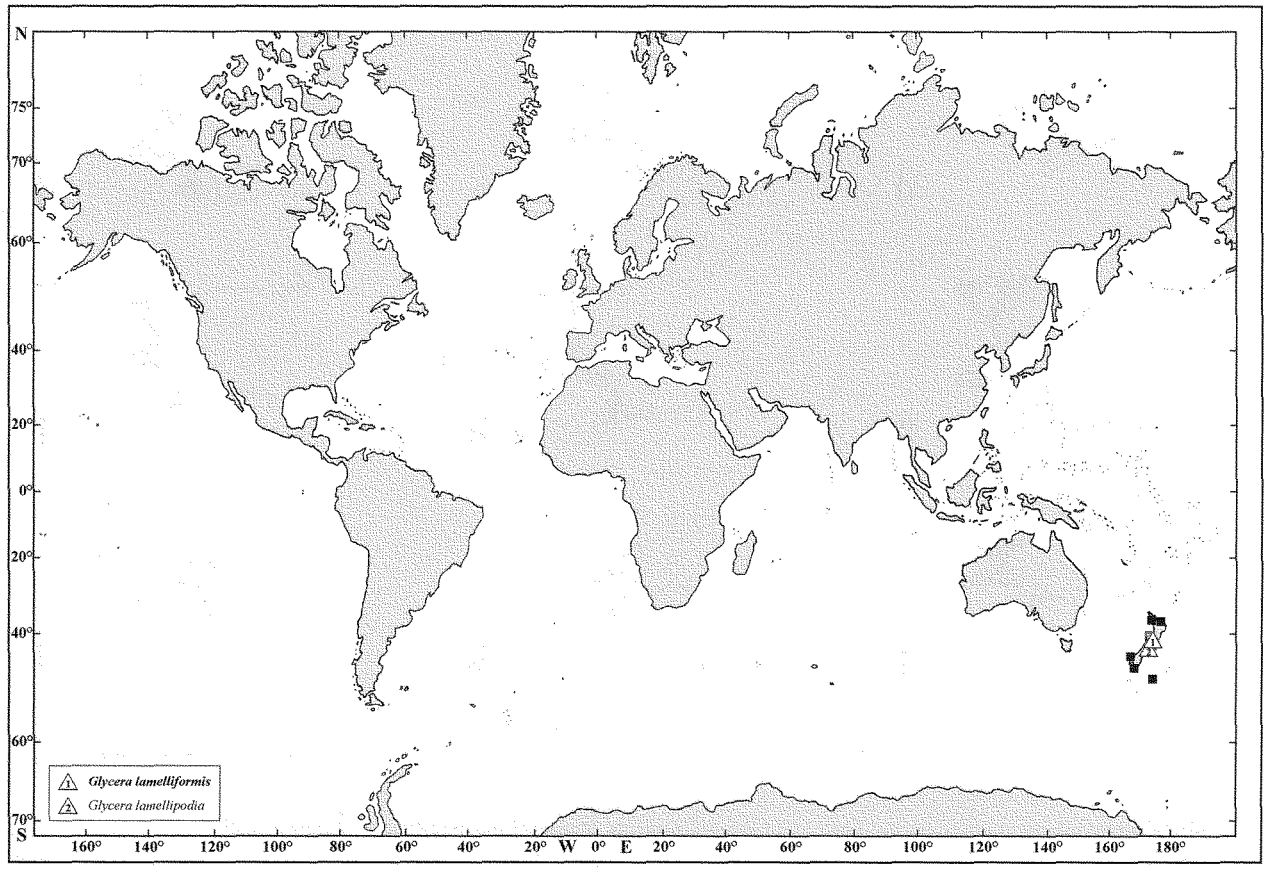

Fig. 93: Distribution of *Glycera lamelliformis* McINTOSH 1885.

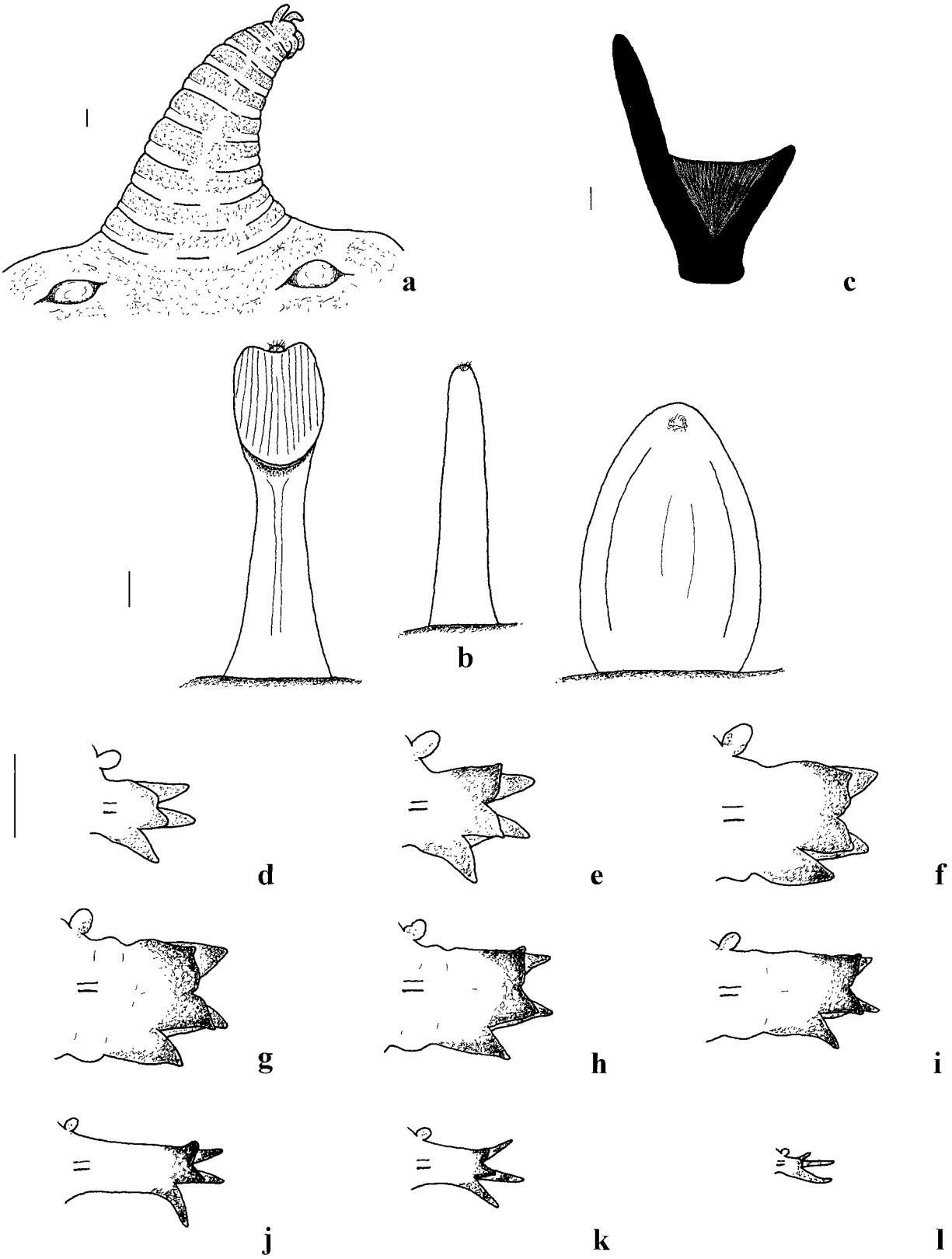

Fig. 94: *Glycera onomichiensis* IZUKA 1912. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a, c: SMF 9599, b: CBM[6], d-l: UMUT; scale bars: a, c = 0.1 mm, b = 0.01 mm, d-l = 0.5 mm)

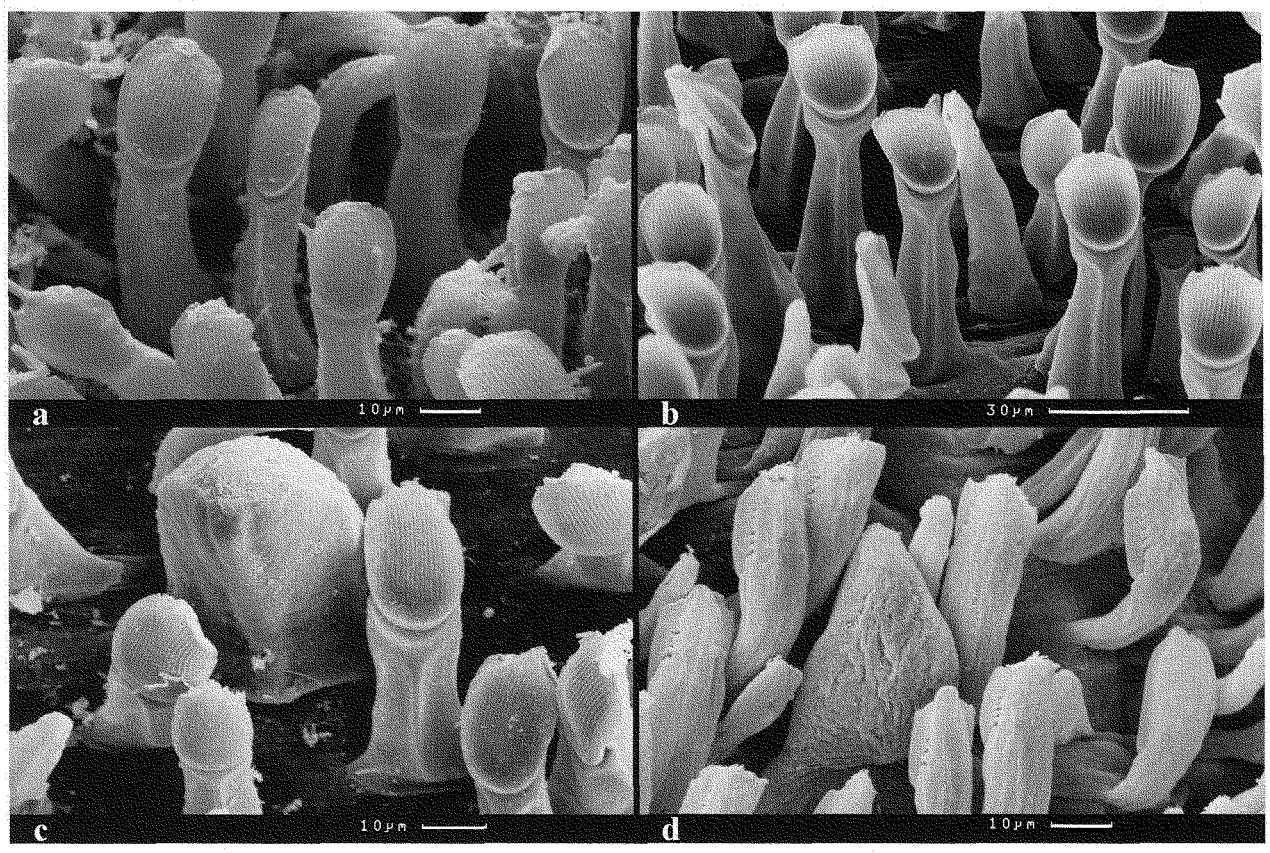

Fig. 95: *Glycera onomichiensis* IZUKA 1912. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: NSM, b: CBM[6], c: UMUT, d: CBM[5])

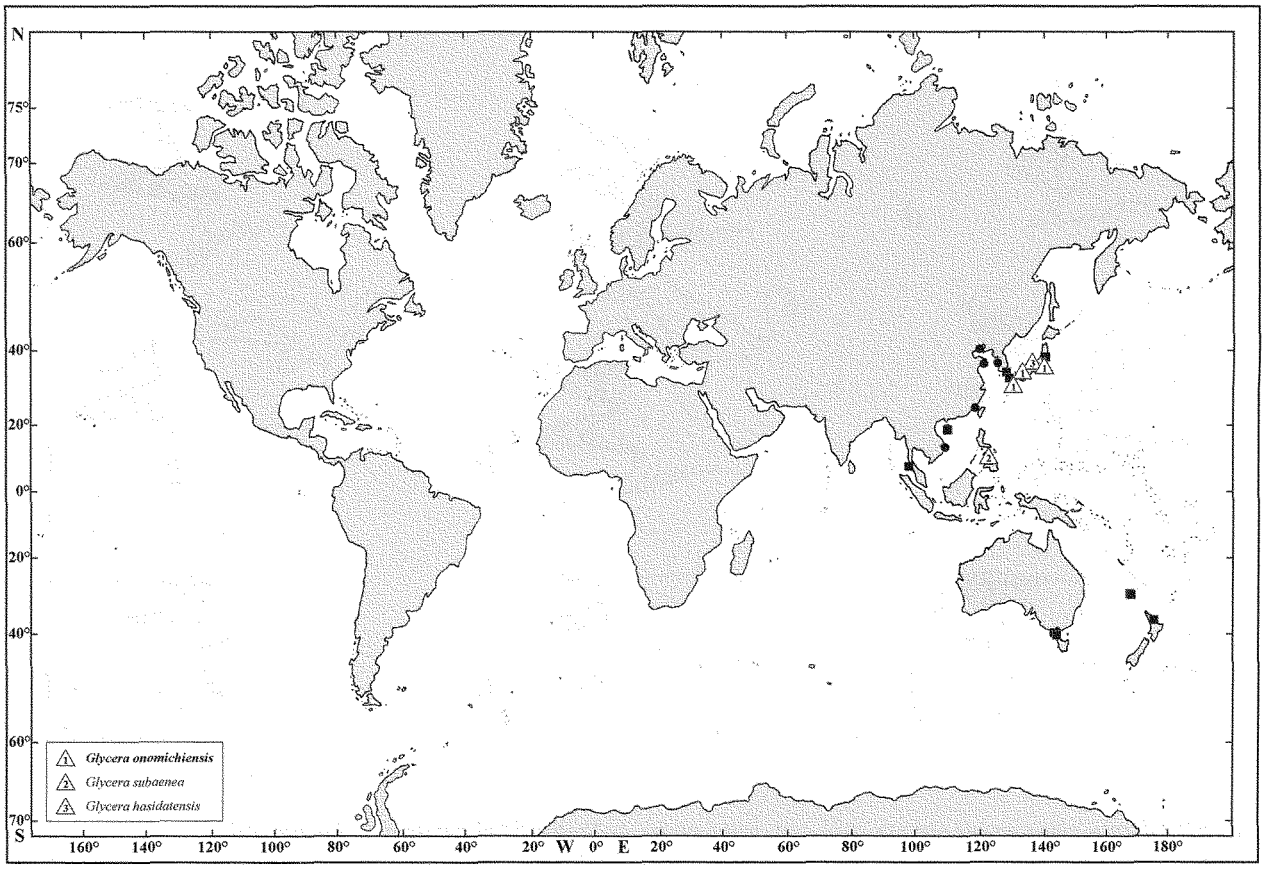

Fig. 96: Distribution of *Glycera onomichiensis* IZUKA 1912.

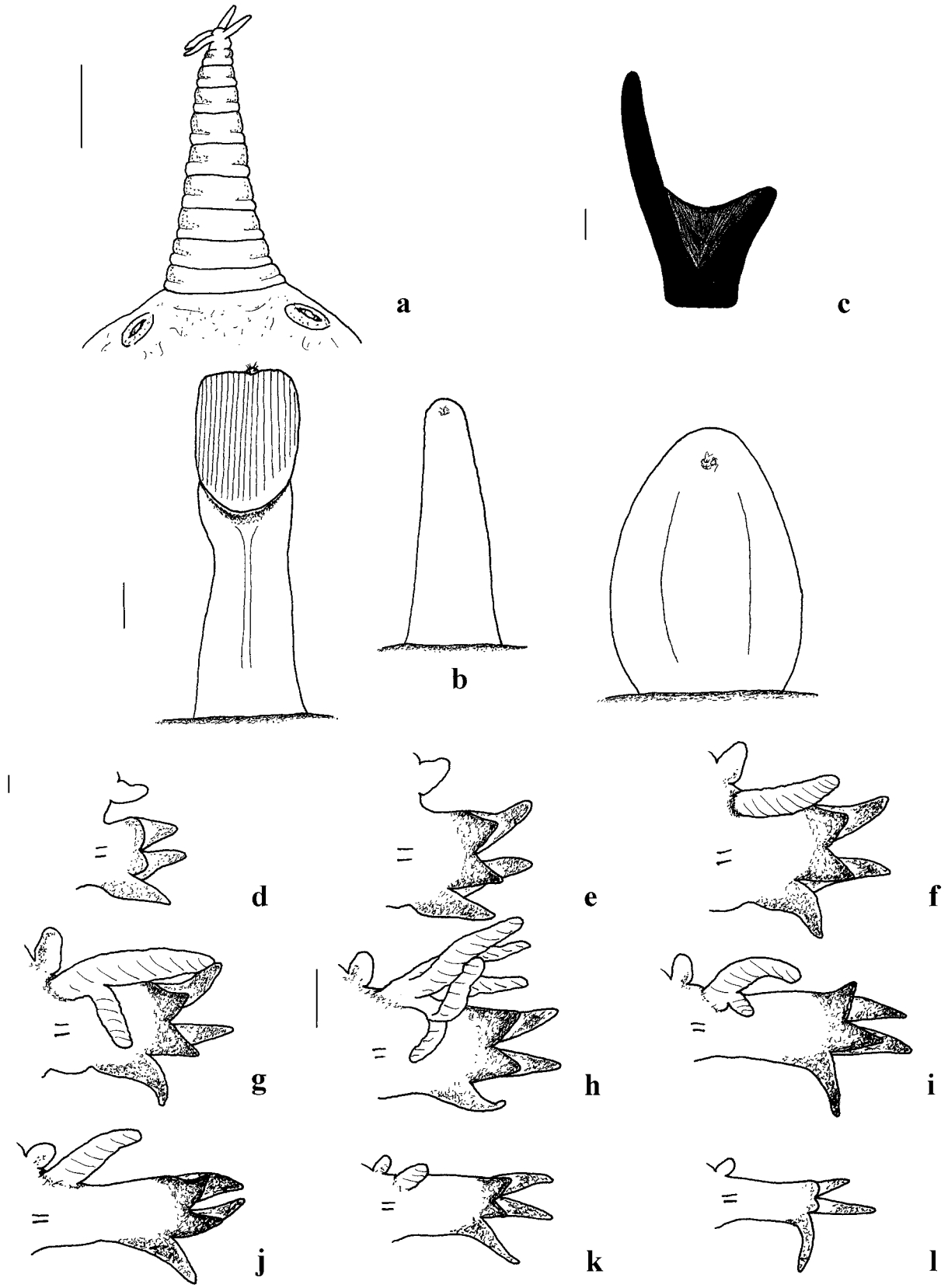

Fig. 97: *Glycera cinnamomea* GRUBE 1874. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-c: SMF 1987, d-g, i-l: SAM A20472, h: UCO R/12; scale bars: a = 0.5 mm, b = 0.01 mm, c-l = 0.1 mm)

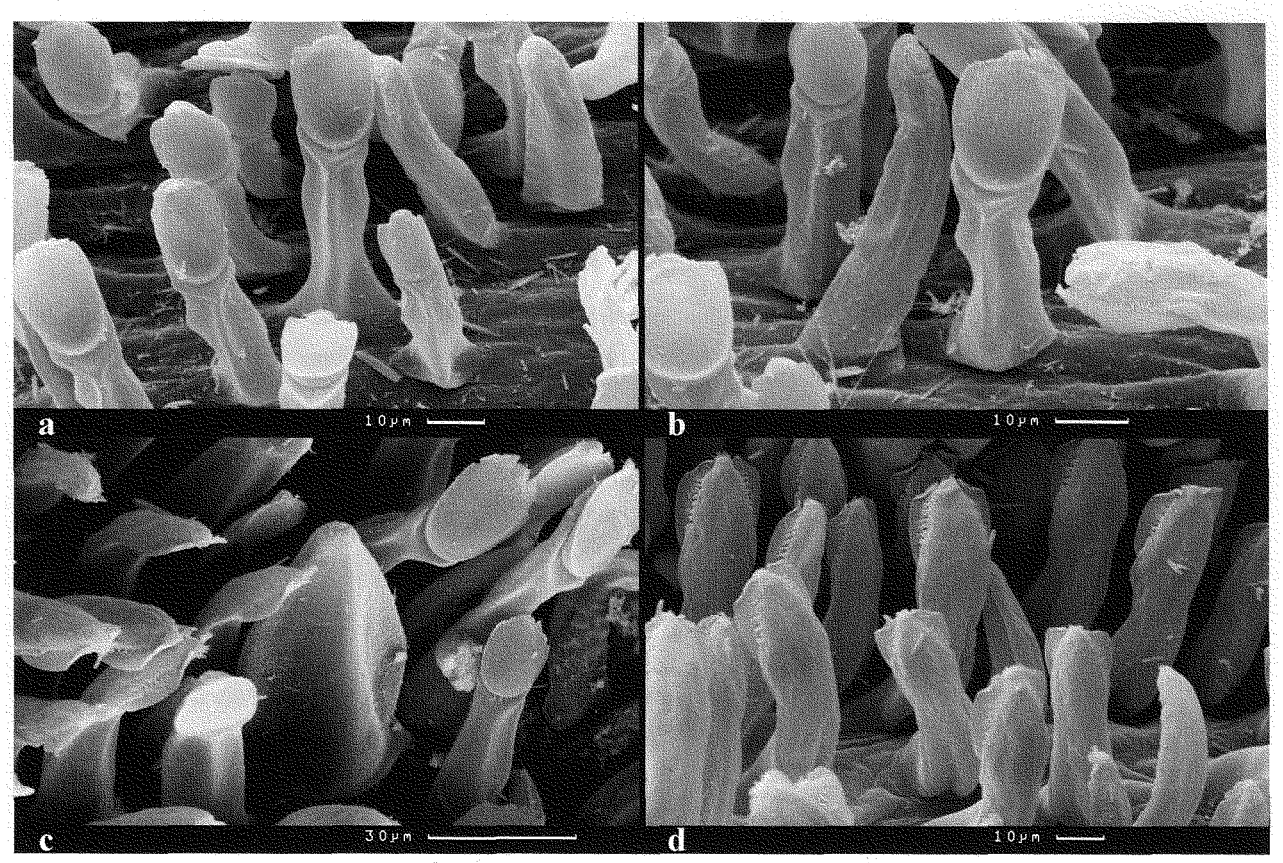

Fig. 98: *Glycera cinnamomea* GRUBE 1874. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: ZMB 5849, c-d: SAM A20472)

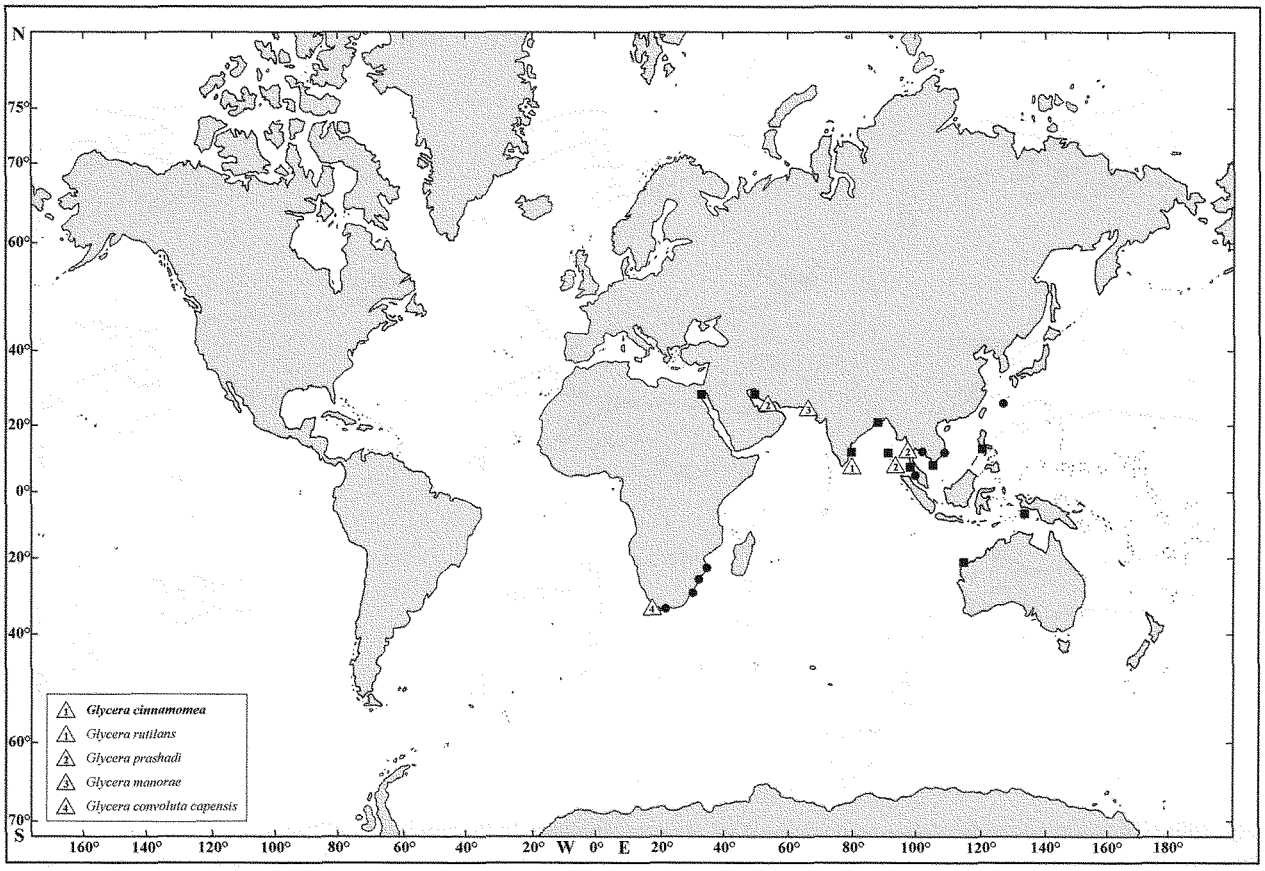

Fig. 99: Distribution of *Glycera cinnamomea* GRUBE 1874.

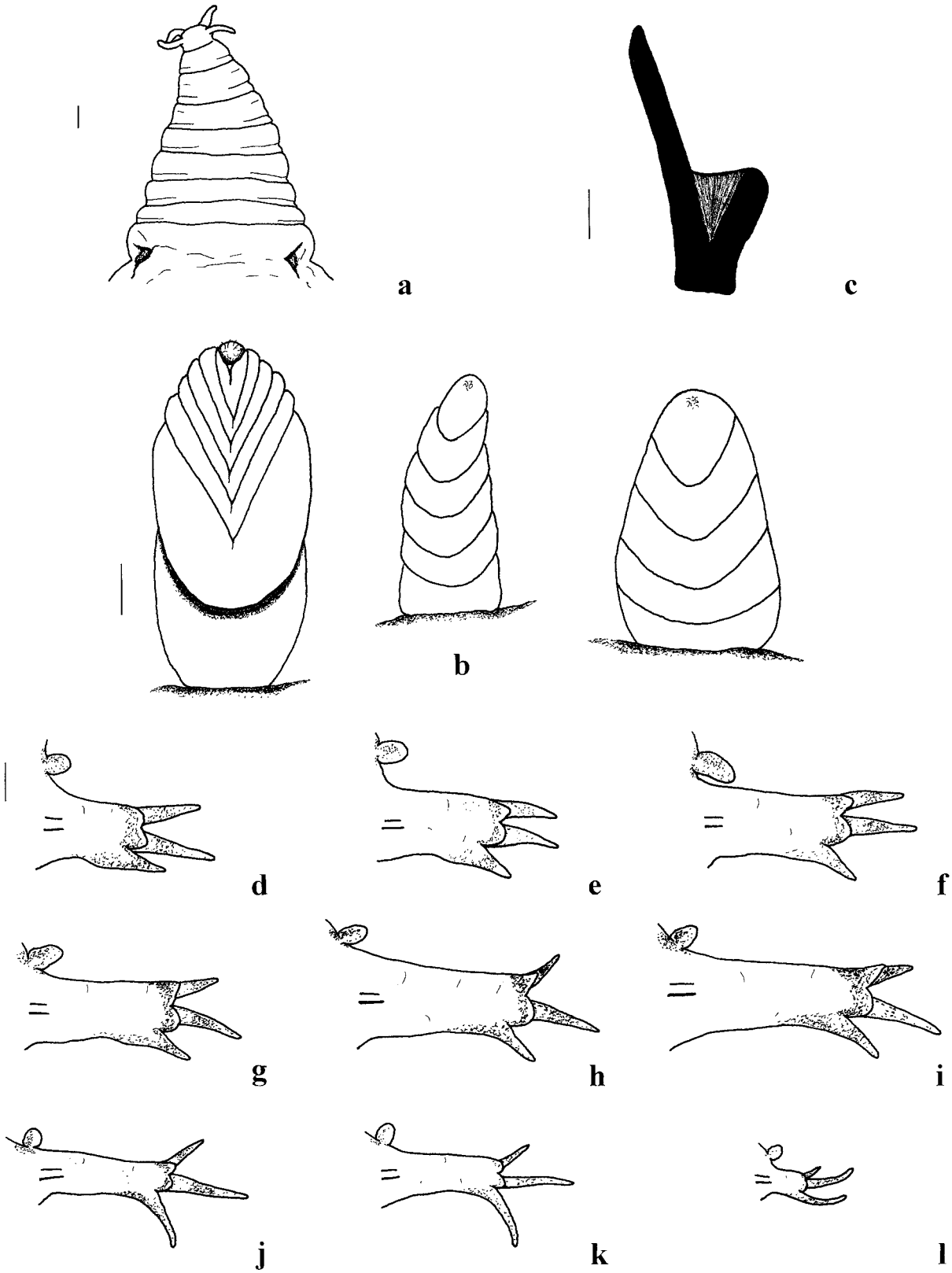

Fig. 100: *Glycera gilbertae* BÖGGEMANN & FIEGE 2001. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a, c: USNM 89789, b: USNM 89784, d-l: USNM 89786; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

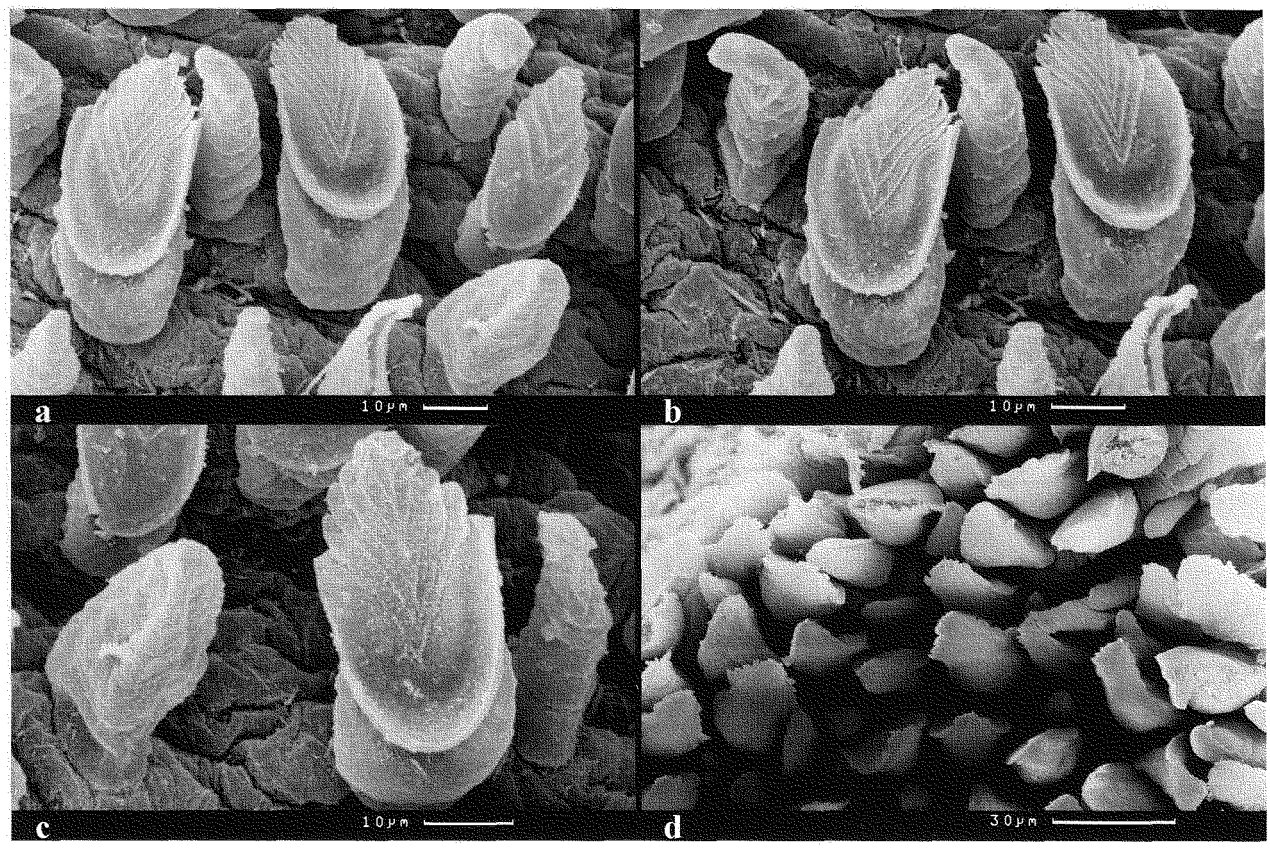

Fig. 101: *Glycera gilbertae* BÖGGEMANN & FIEGE 2001. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; USNM 89784)

Fig. 102: Distribution of *Glycera gilbertae* BÖGGEMANN & FIEGE 2001.

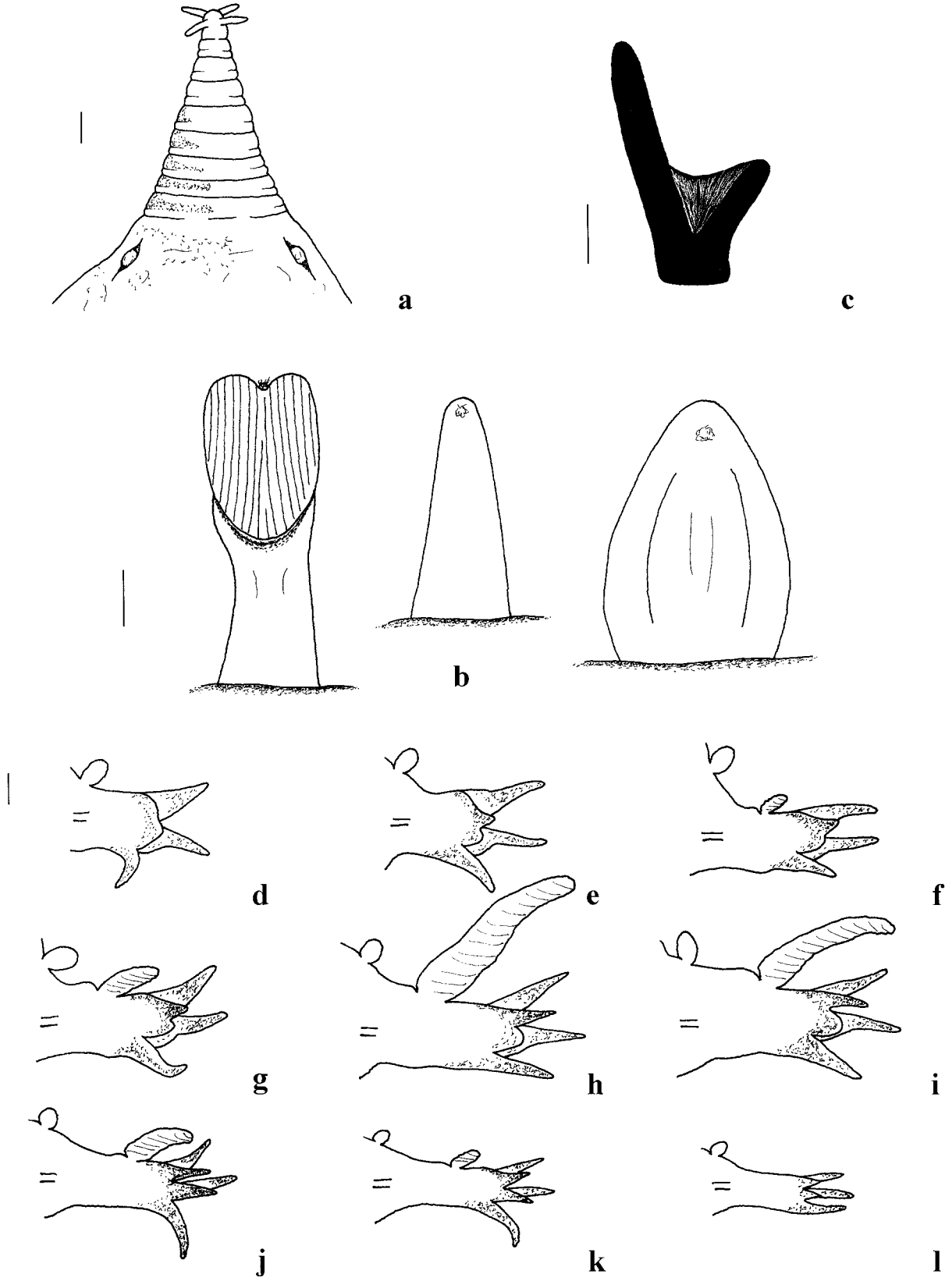

Fig. 103: *Glycera posterobranchia* HOAGLAND 1920. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: SMF 9603; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

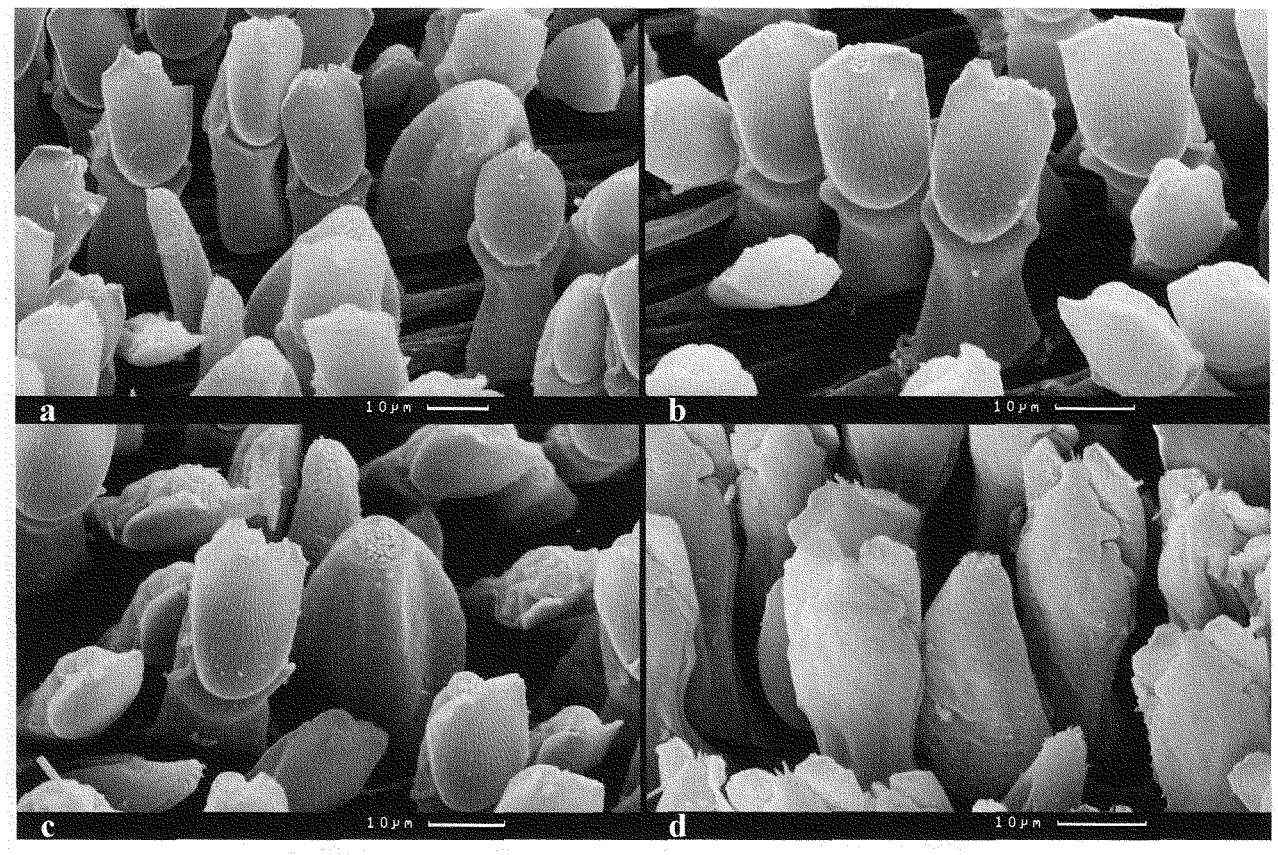

Fig. 104: *Glycera posterobranchia* HOAGLAND 1920. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: SMF 9603)

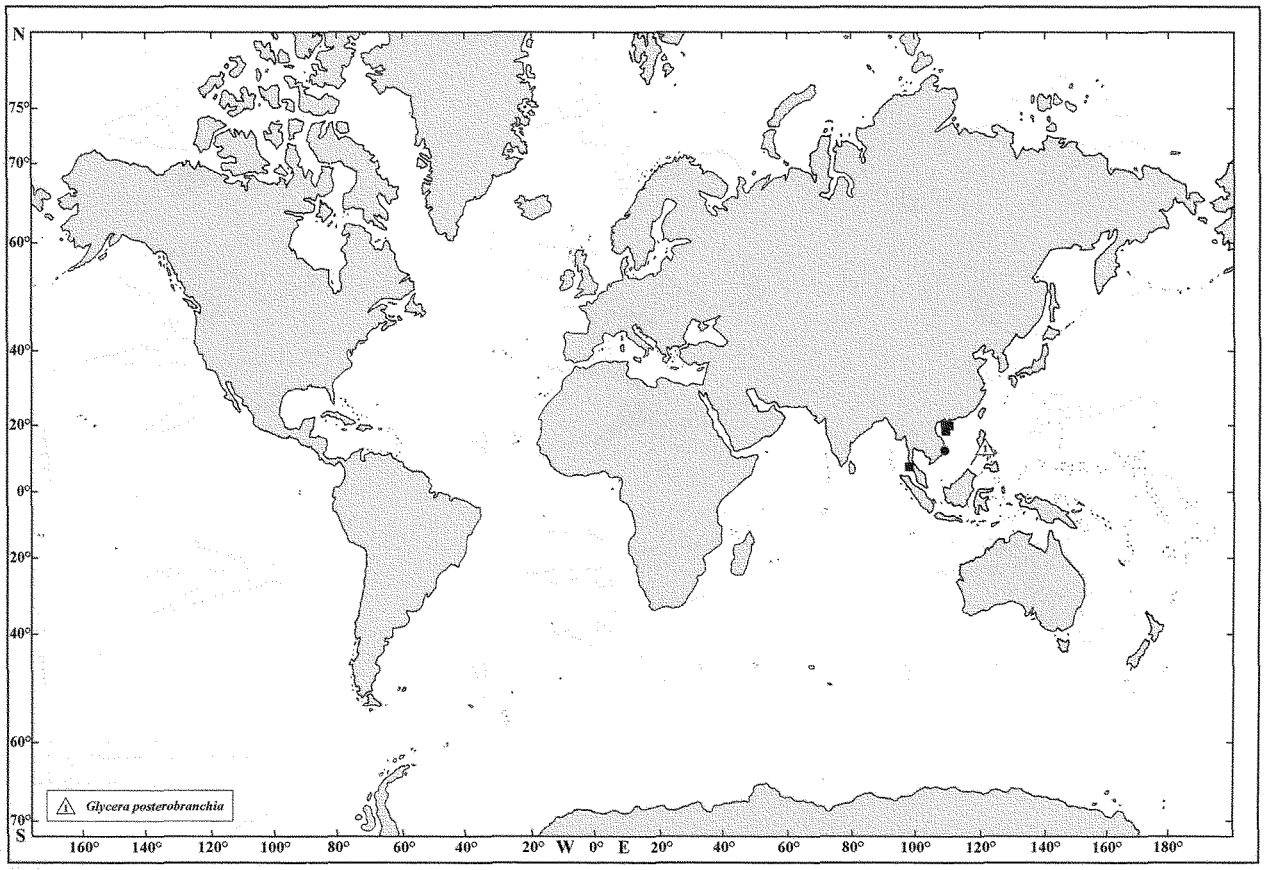

Fig. 105: Distribution of *Glycera posterobranchia* HOAGLAND 1920.

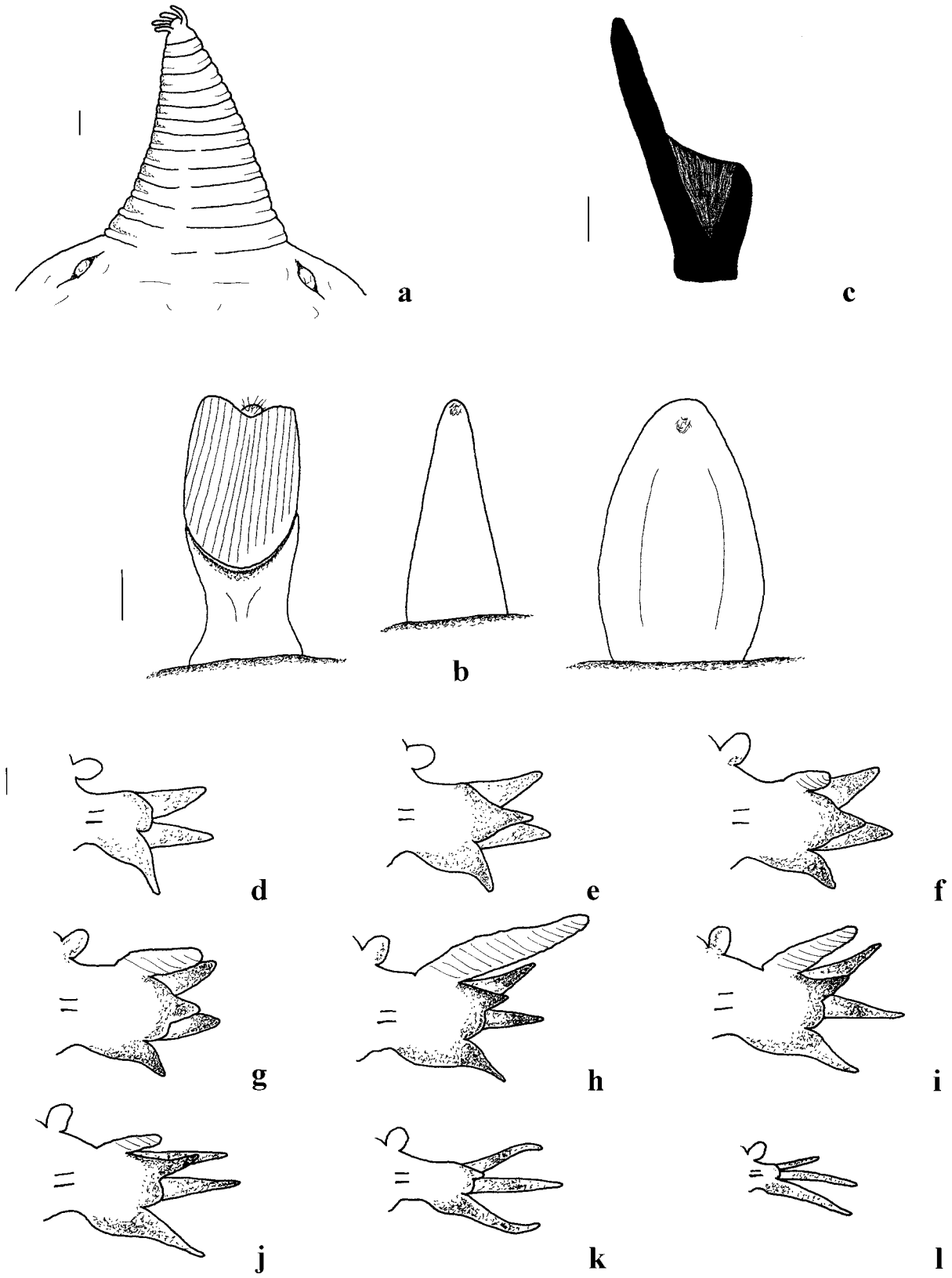

Fig. 106: *Glycera macrobranchia* MOORE 1911. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: LACM[7]; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

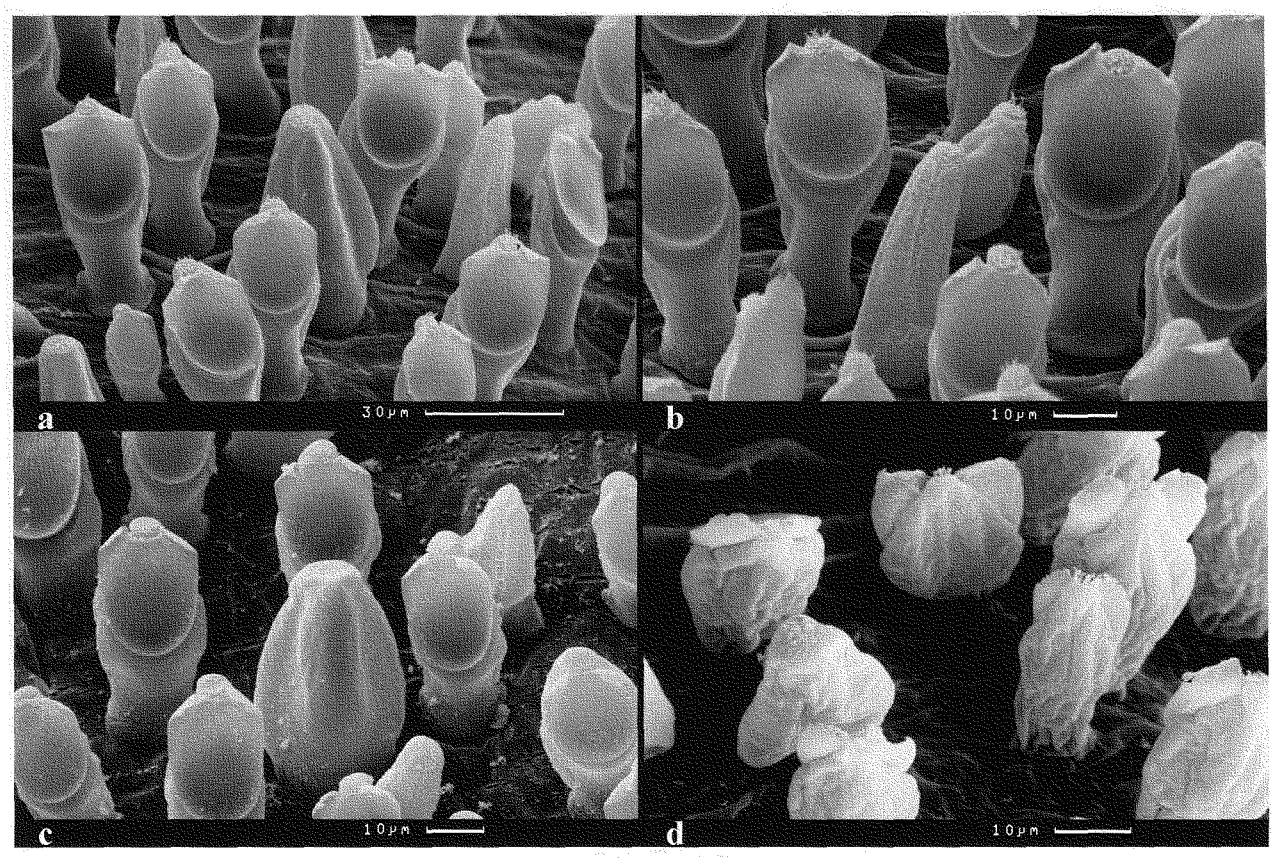

Fig. 107: *Glycera macrobranchia* MOORE 1911. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b, d: LACM[8], c: LACM N2980)

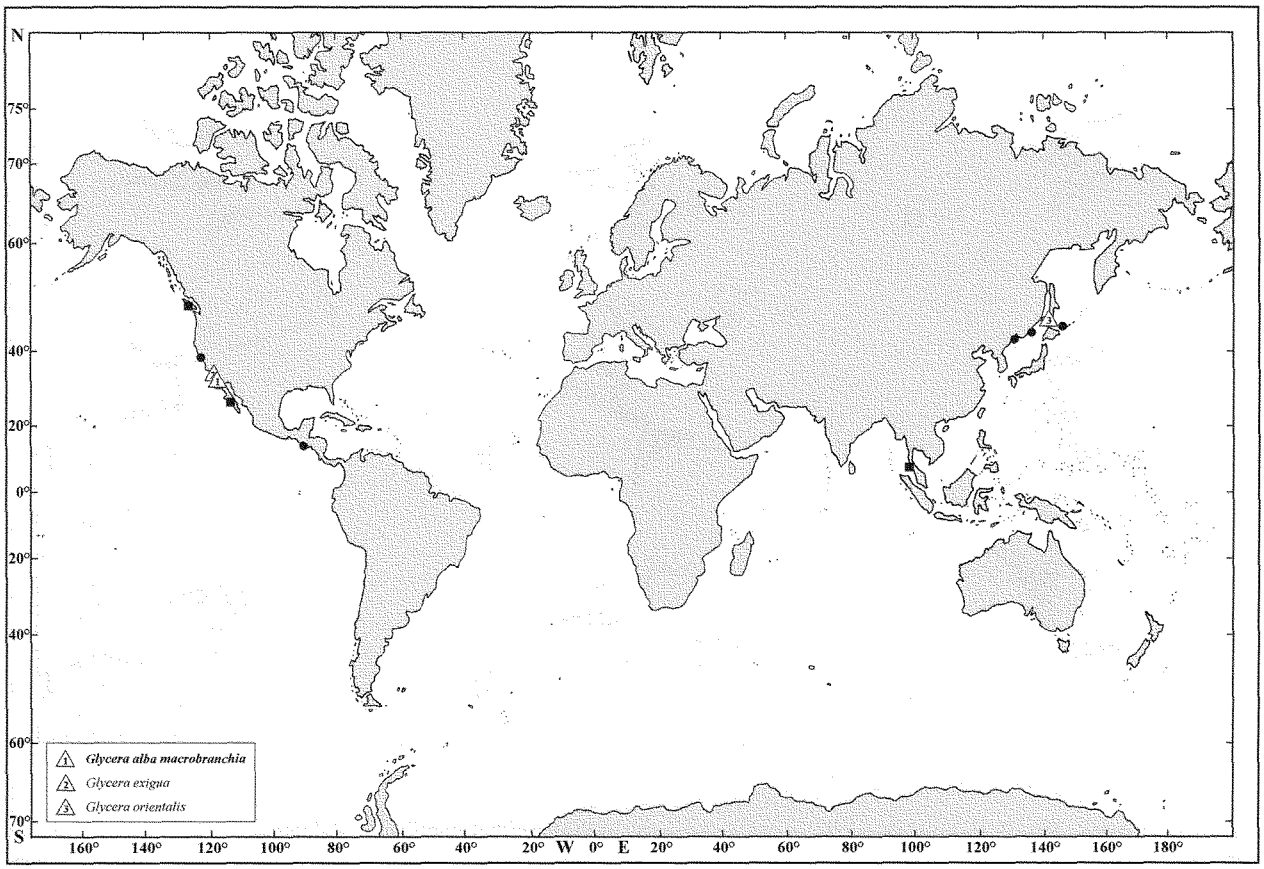

Fig. 108: Distribution of *Glycera macrobranchia* MOORE 1911.

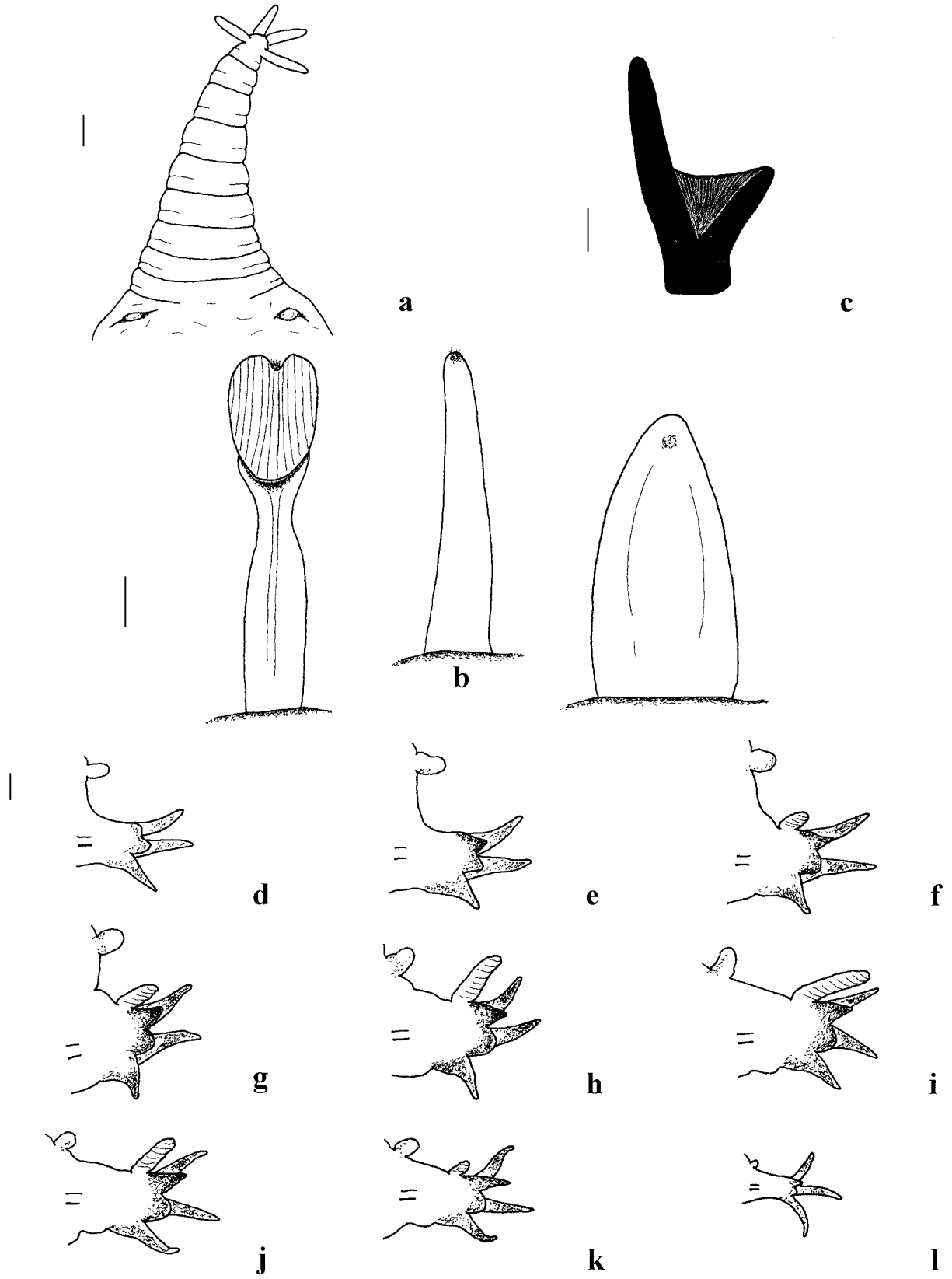

Fig. 109: *Glycera alba* (O.F. MÜLLER 1776). – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-c: SMF 9625, d-l: SMF 9649; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

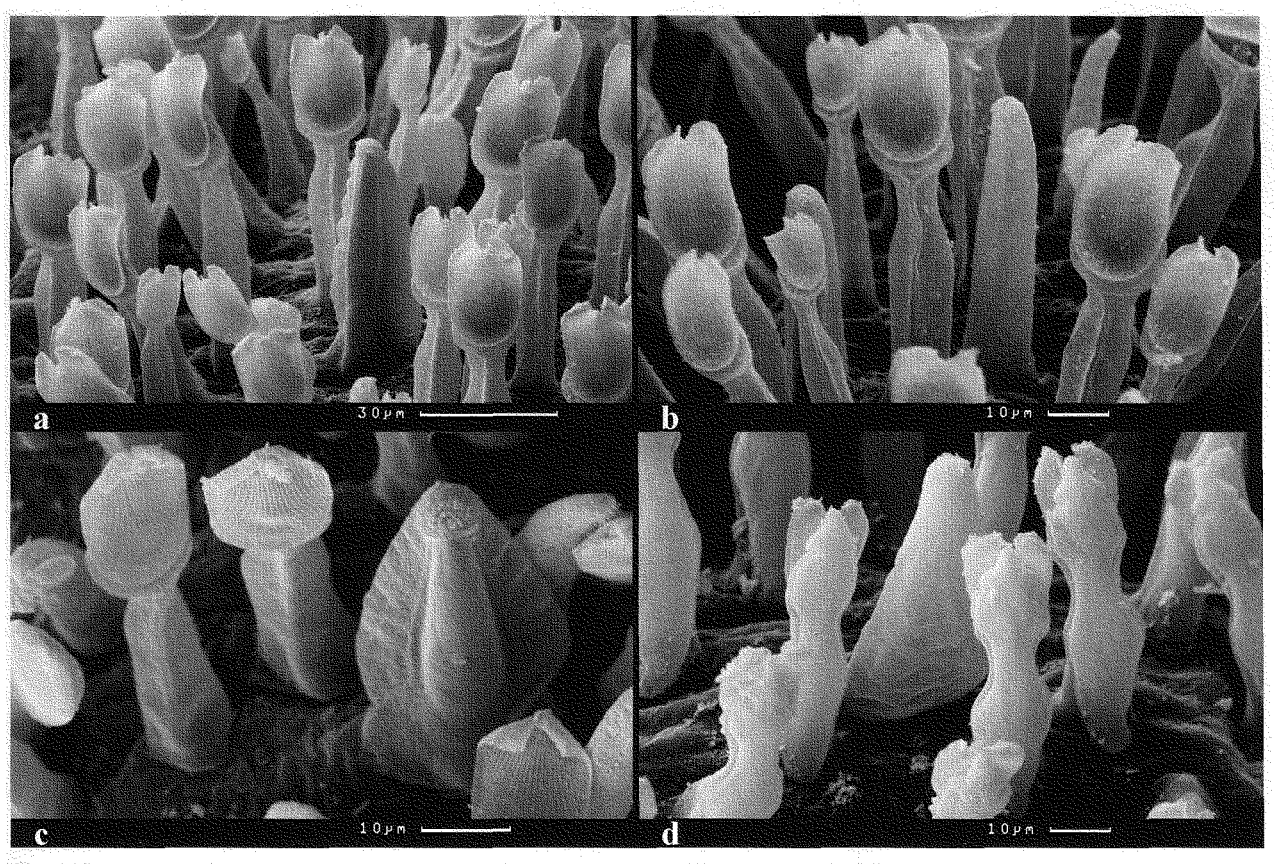

Fig. 110: *Glycera alba* (O.F. MÜLLER 1776). – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: SMF 9625, c: SMF 4473, d: SMF 9606)

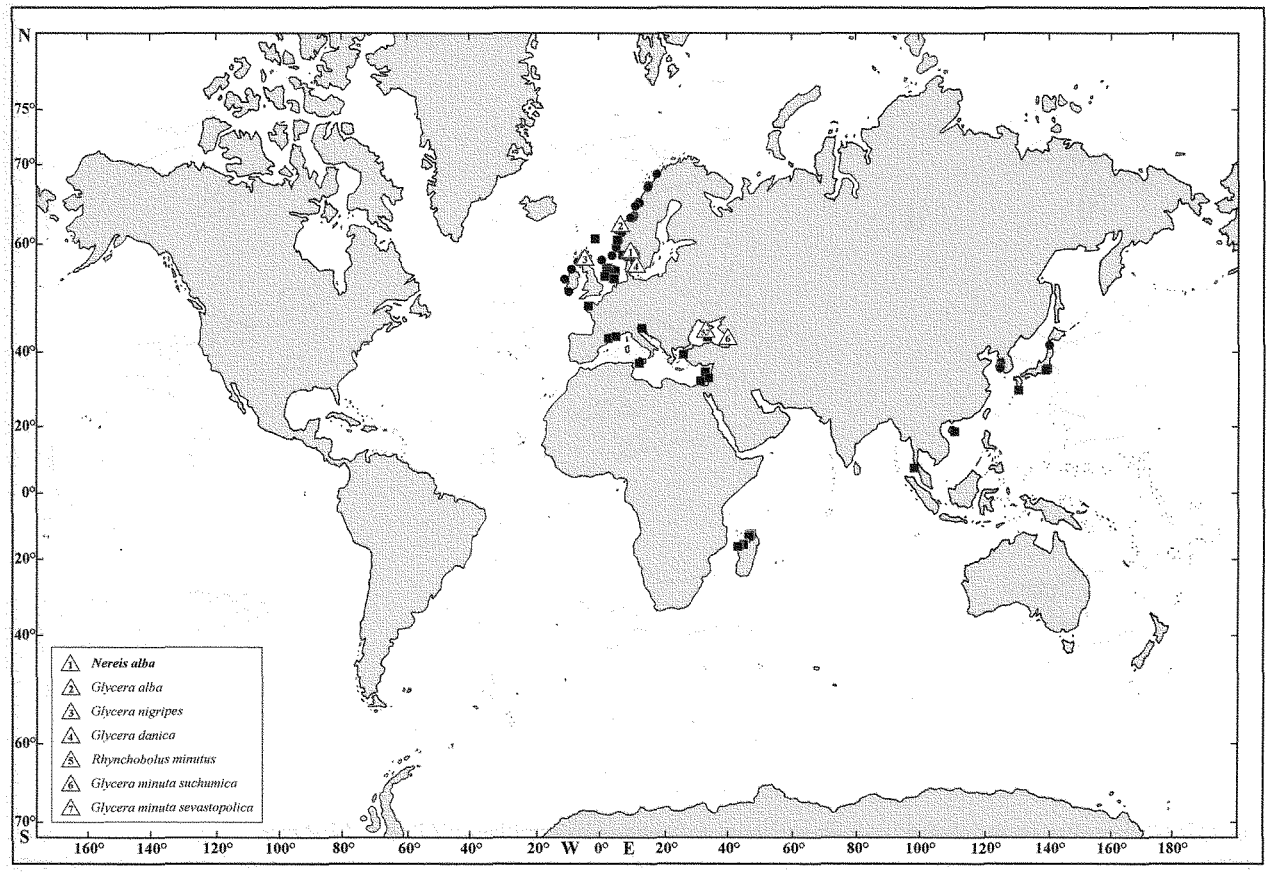

Fig. 111: Distribution of *Glycera alba* (O.F. MÜLLER 1776).

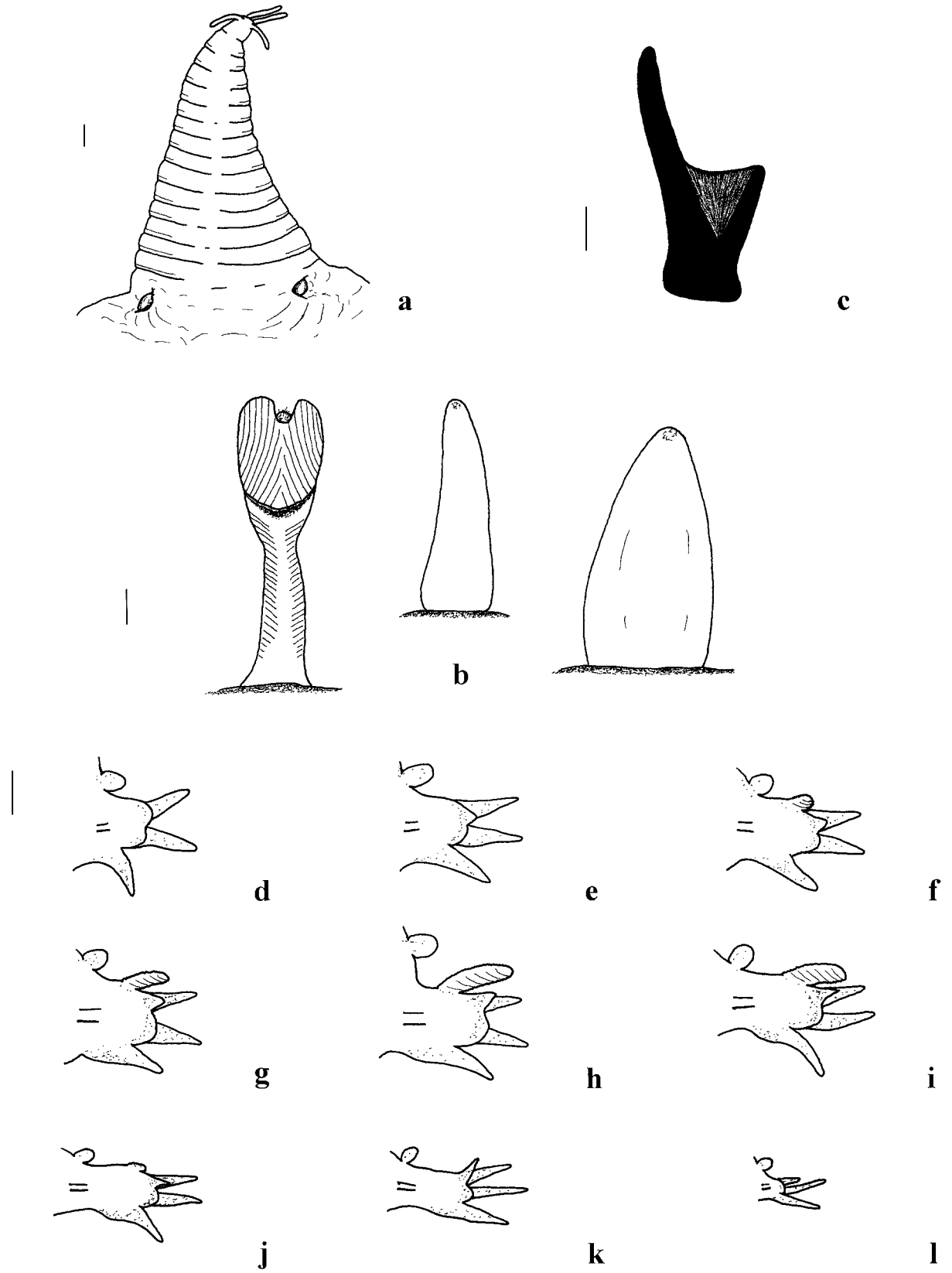

Fig. 112: *Glycera natalensis* DAY 1957. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-b: BMNH 1963.14.3, c-l: USNM Acc. No. 106702; scale bars: a, d-l = 0.1 mm, b = 0.01 mm, c = 0.05 mm)

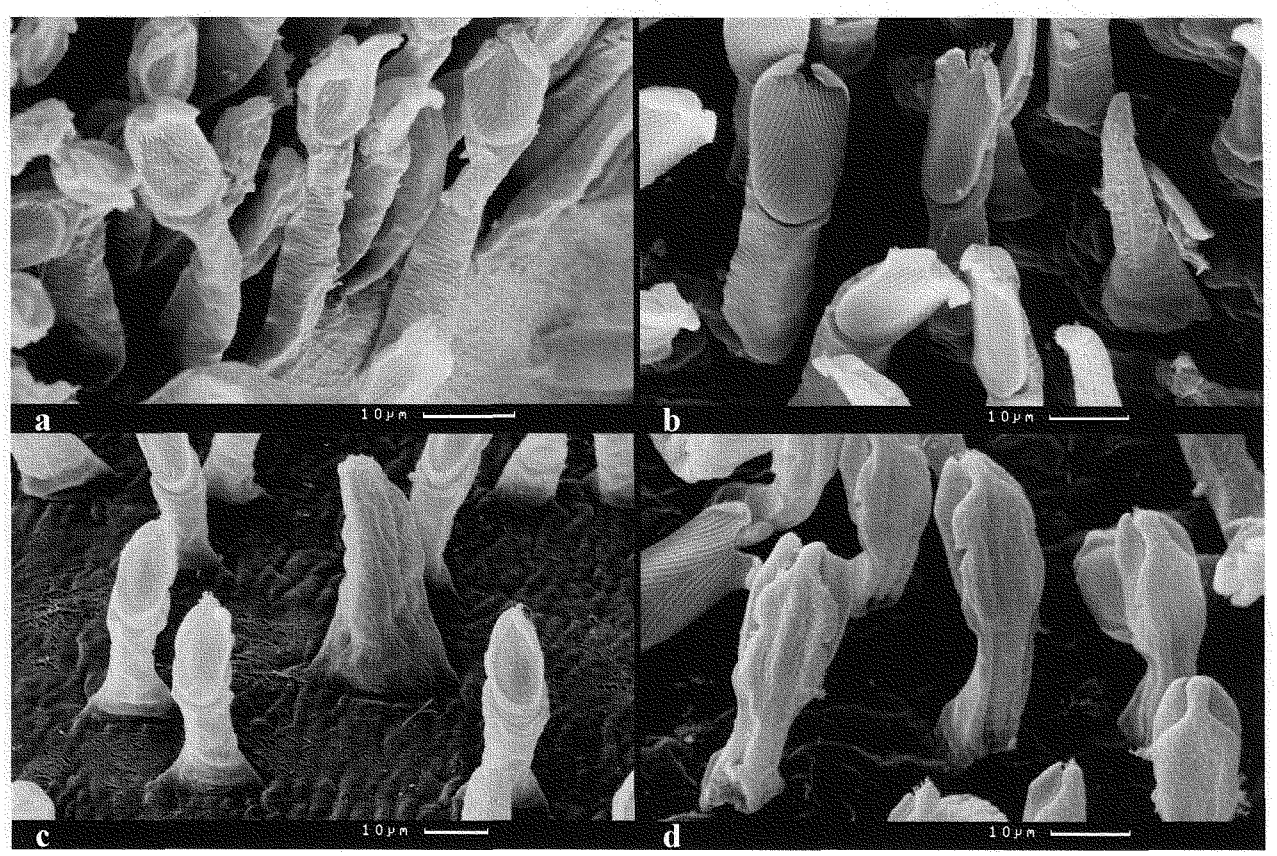

Fig. 113: *Glycera natalensis* DAY 1957. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, c: USNM Acc. No. 106702, b, d: USNM 48947)

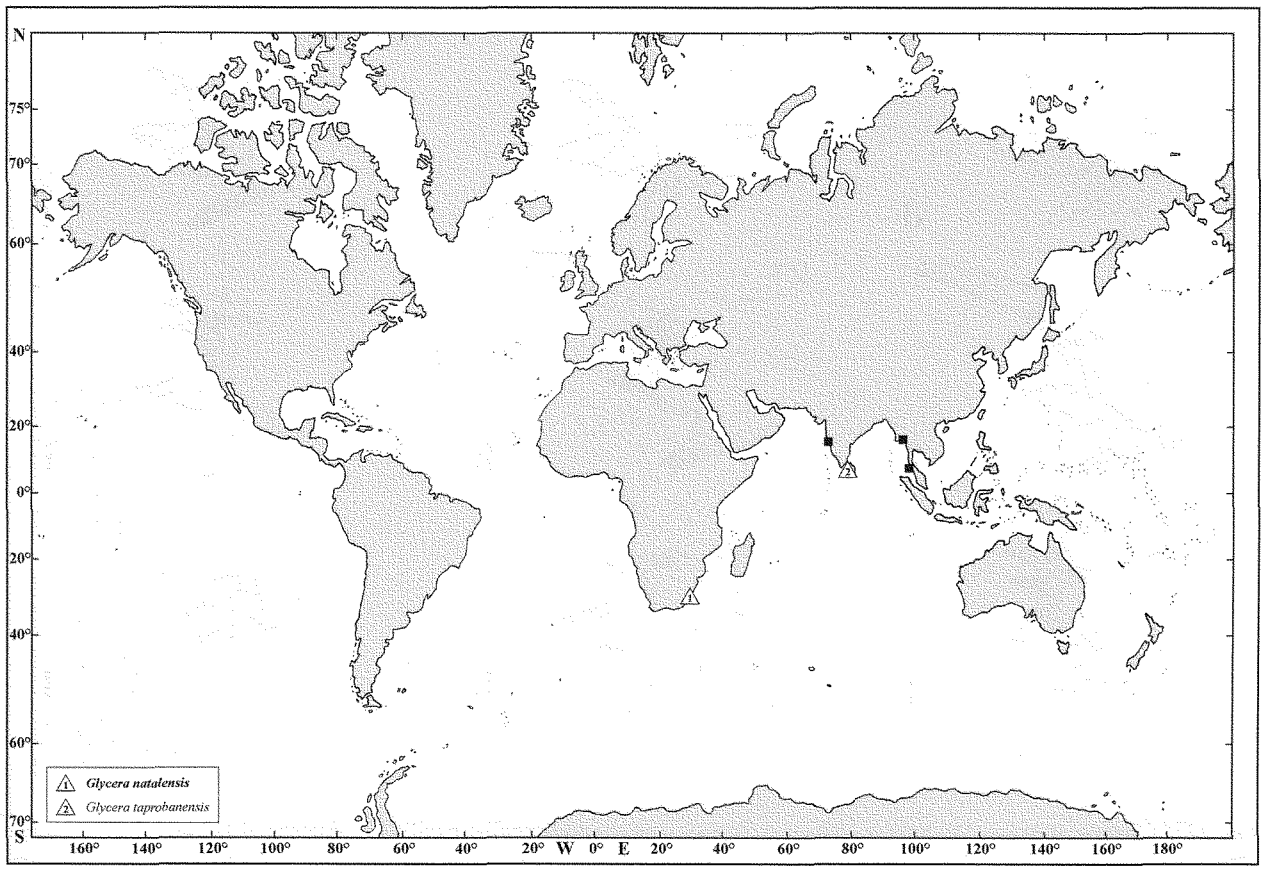

Fig. 114: Distribution of *Glycera natalensis* DAY 1957.

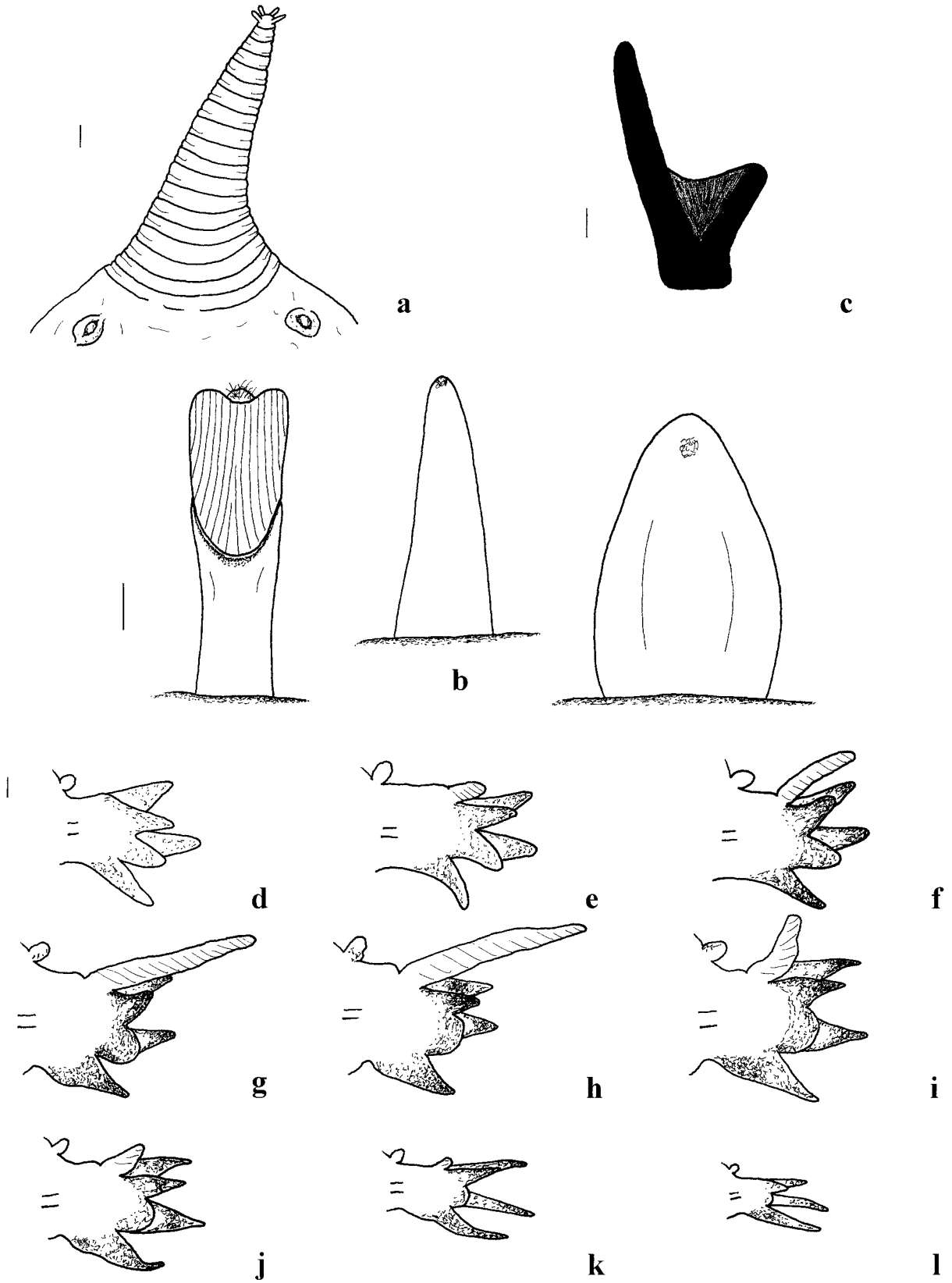

Fig. 115: *Glycera africana* ARWIDSSON 1899. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: SAM A19992, b-l: ZMB 4110; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

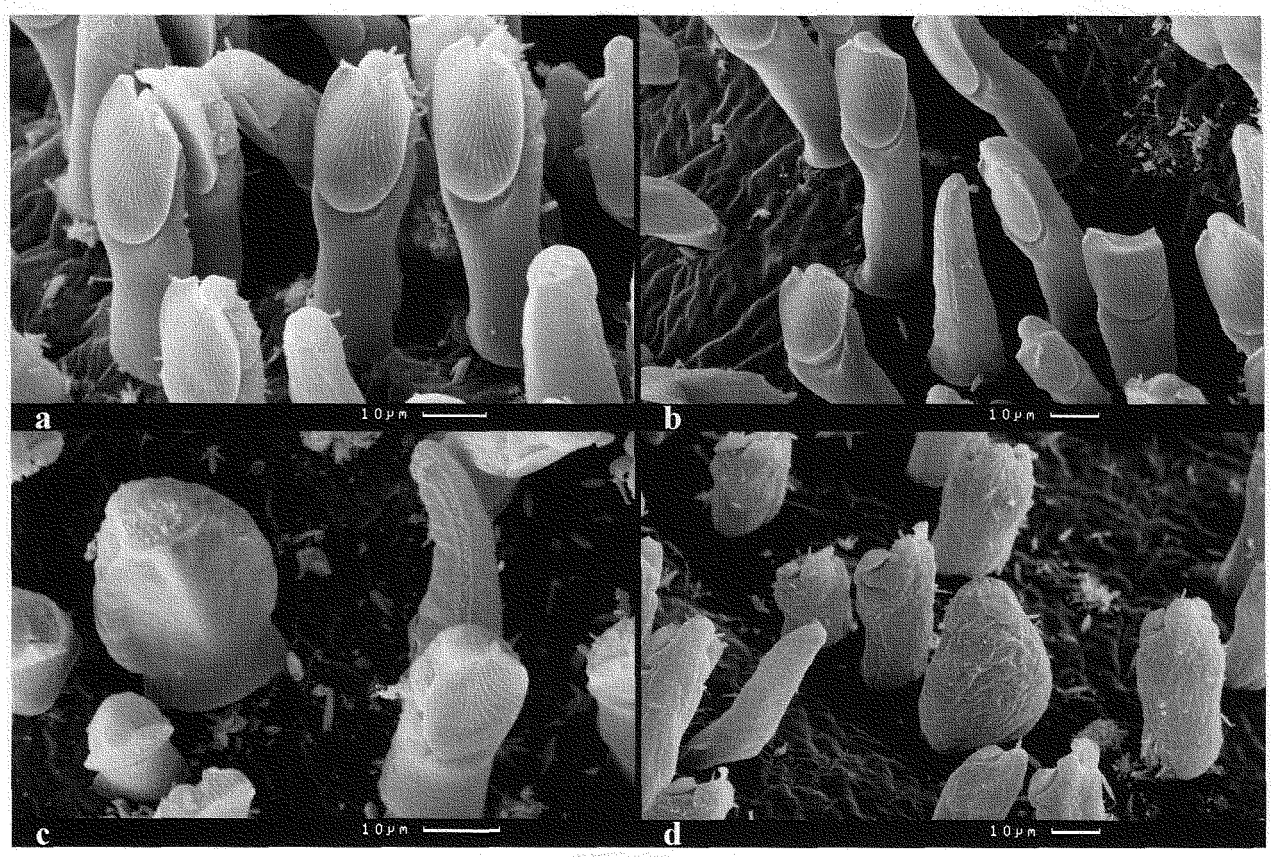

Fig. 116: *Glycera africana* ARWIDSSON 1899. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: SAM A19992)

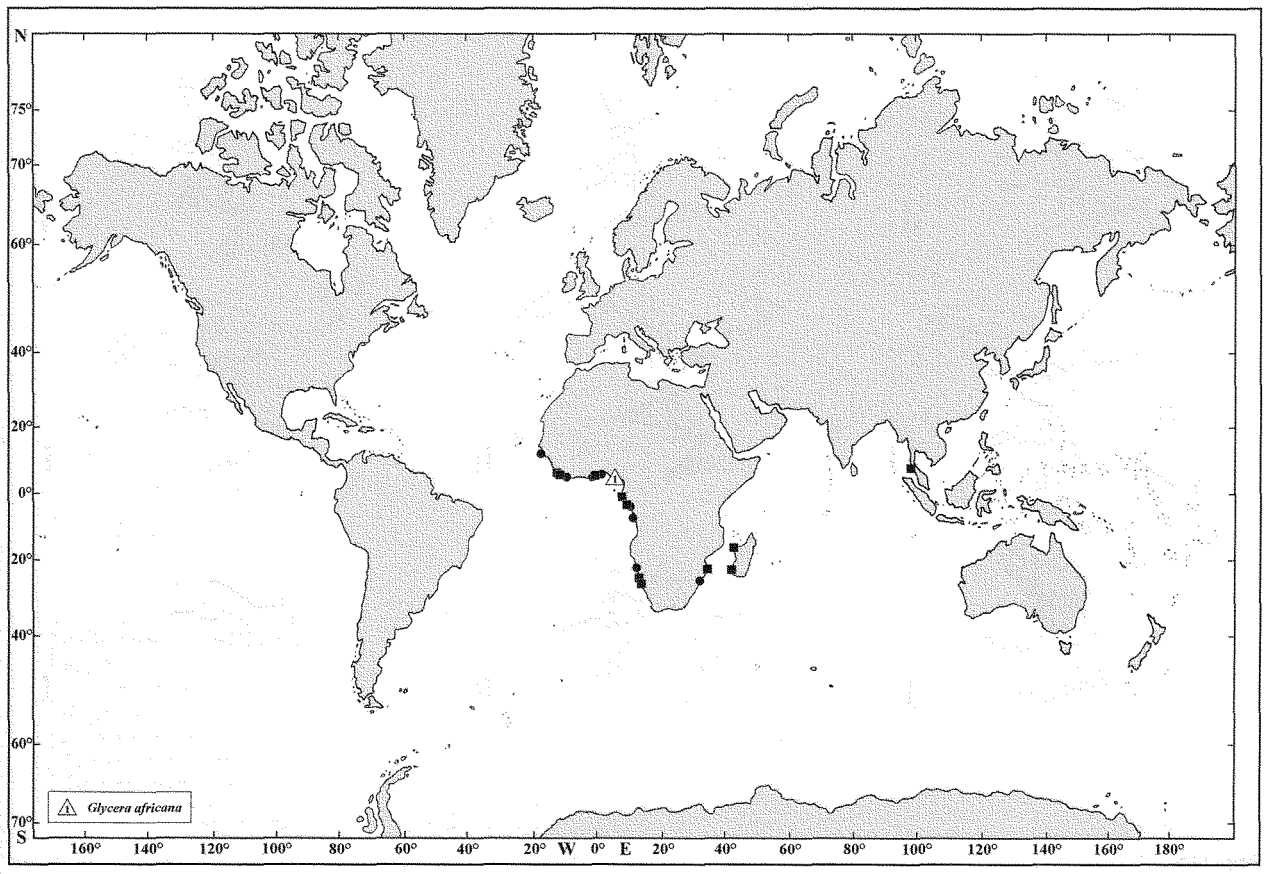

Fig. 117: Distribution of *Glycera africana* ARWIDSSON 1899.

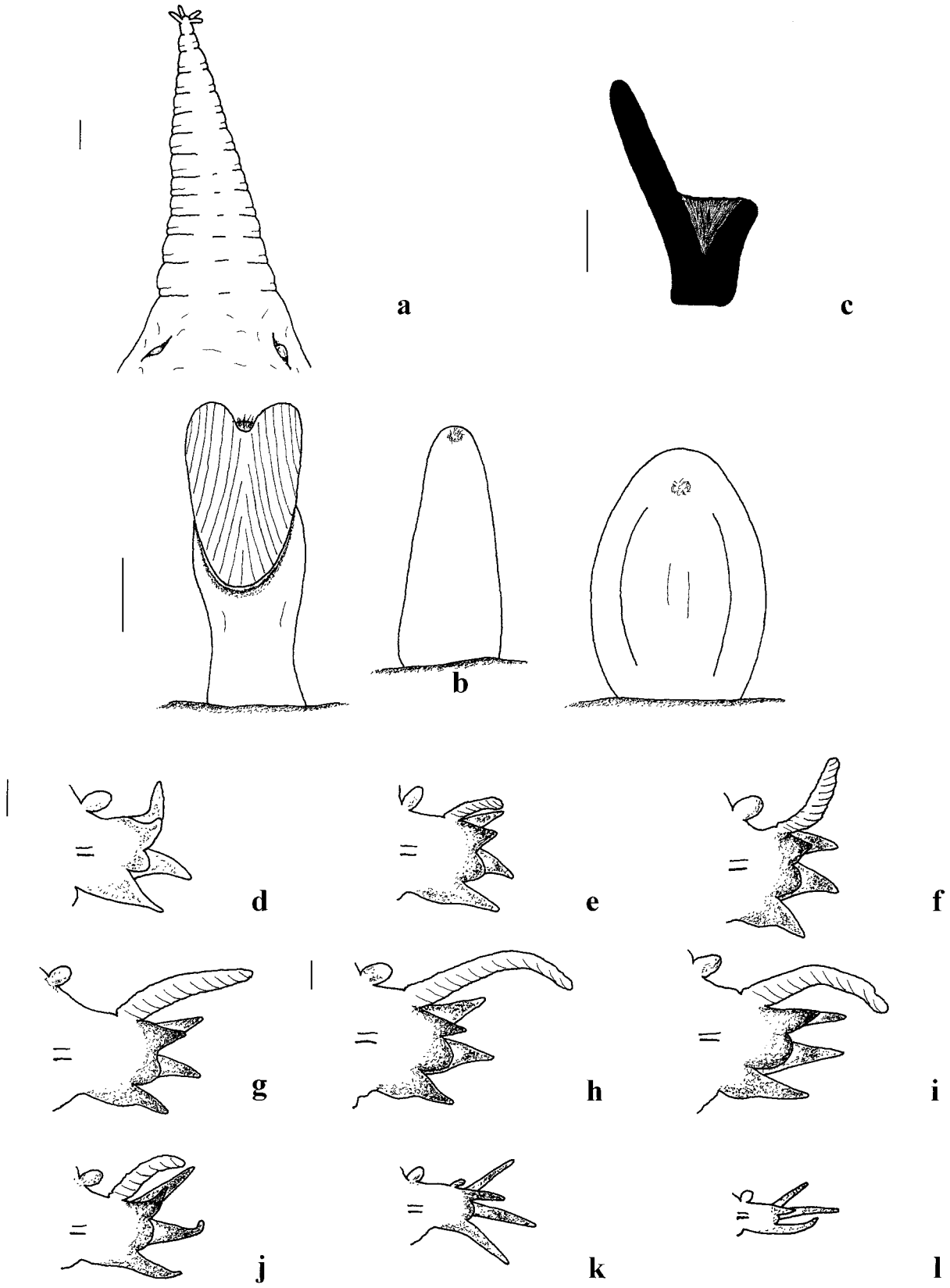

Fig. 118: *Glycera tridactyla* SCHMARDA 1861. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-g: SMF 9673, h-l: HUJ[9]; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

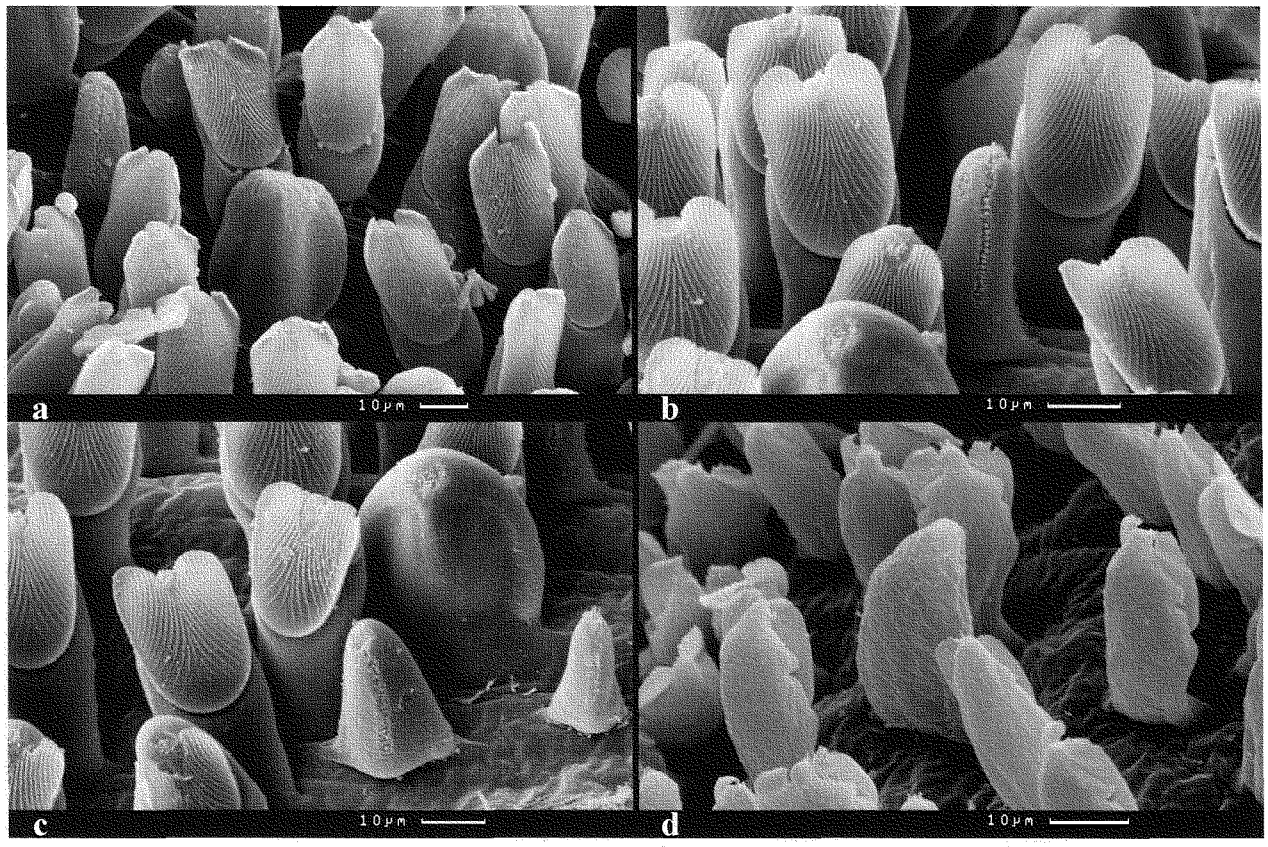

Fig. 119: *Glycera tridactyla* SCHMARDA 1861. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a: SMF 9653, b-c: SMF 9656, d: AM W17684)

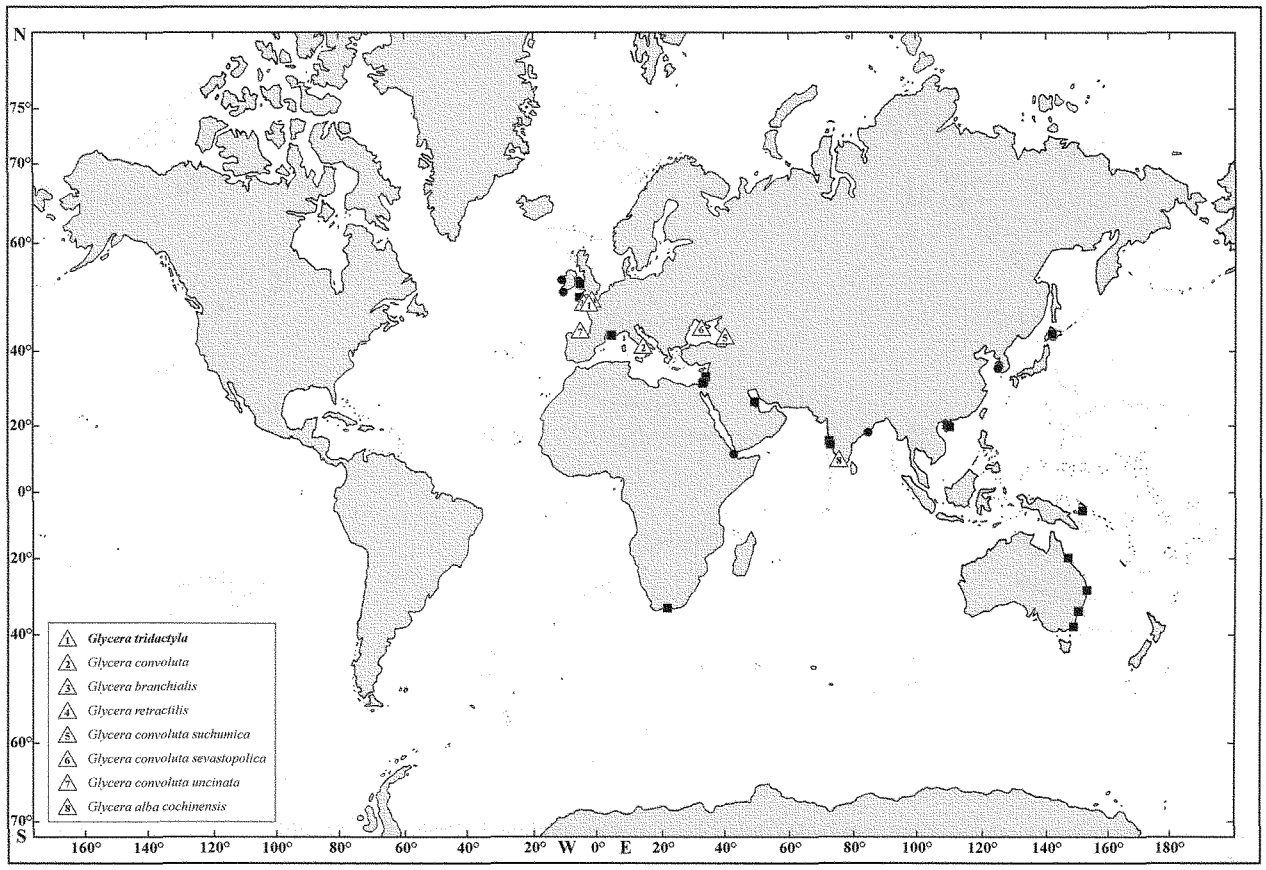

Fig. 120: Distribution of *Glycera tridactyla* SCHMARDA 1861.

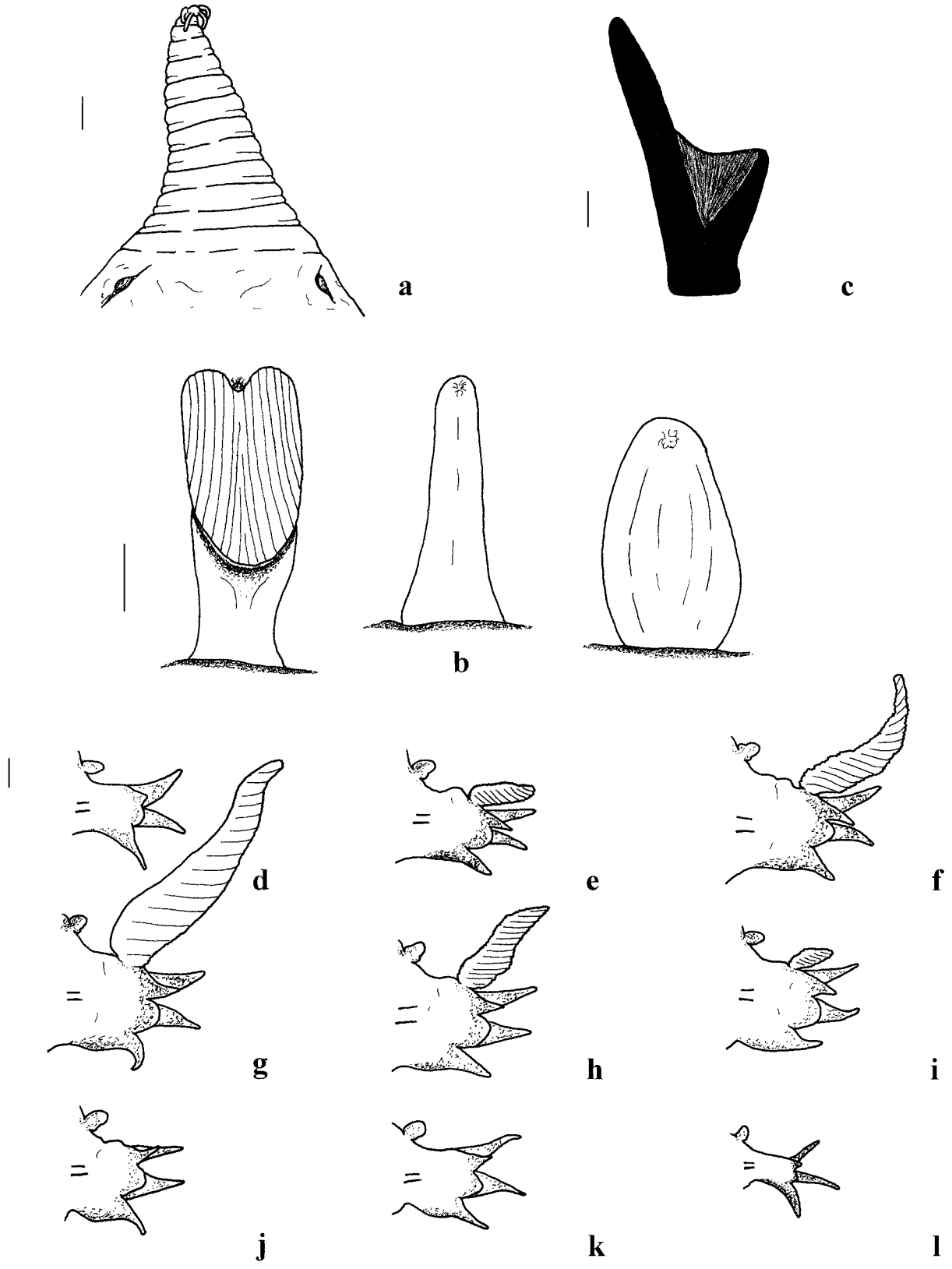

Fig. 121: *Glycera prosobranchia* BÖGGEMANN & FIEGE 2001. – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a, c: SMF 9676, b: USNM 186549, d-l: USNM 186547; scale bars: a, d-l = 0.1 mm, b = 0.01 mm, c = 0.05 mm)

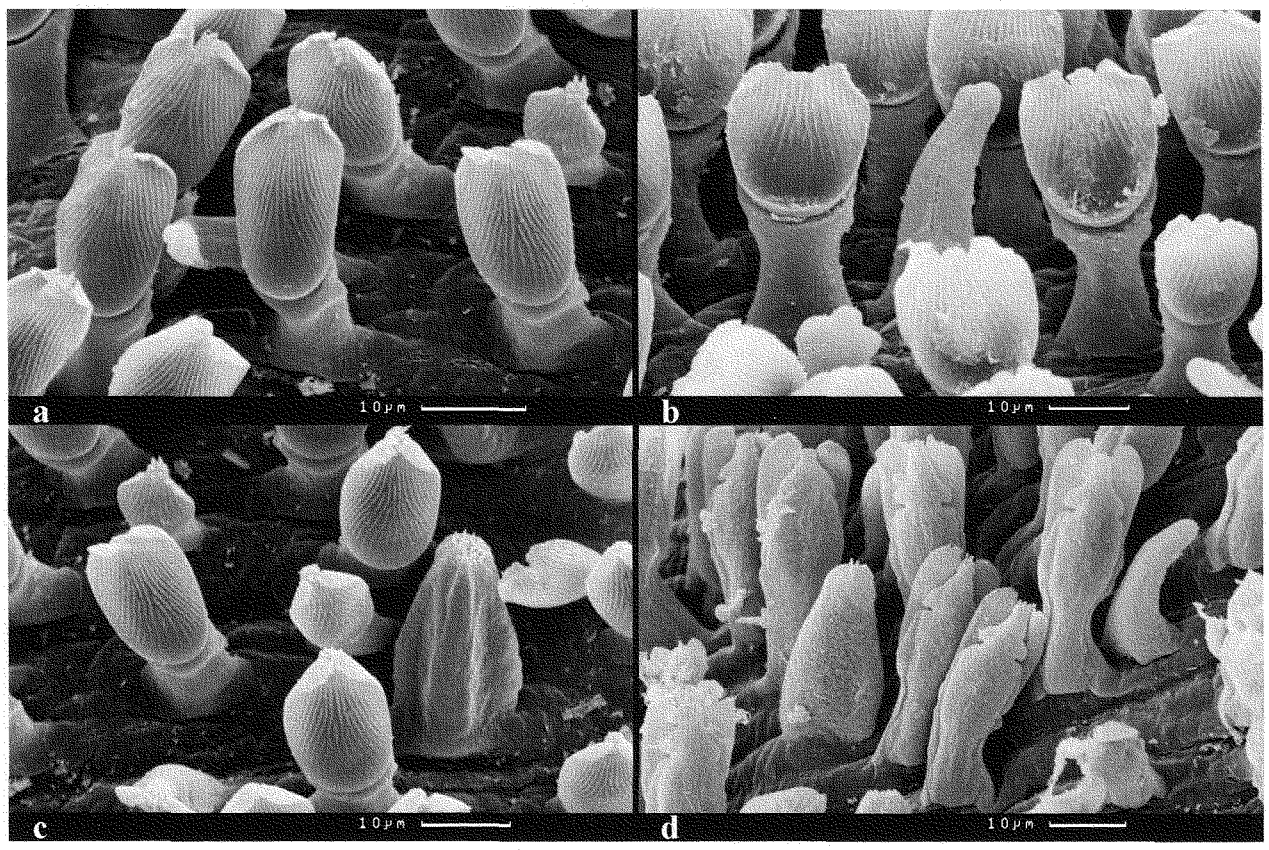

Fig. 122: *Glycera prosobranchia* BÖGGEMANN & FIEGE 2001. – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, c-d: UNAM PO-41-010, b: USNM 186549)

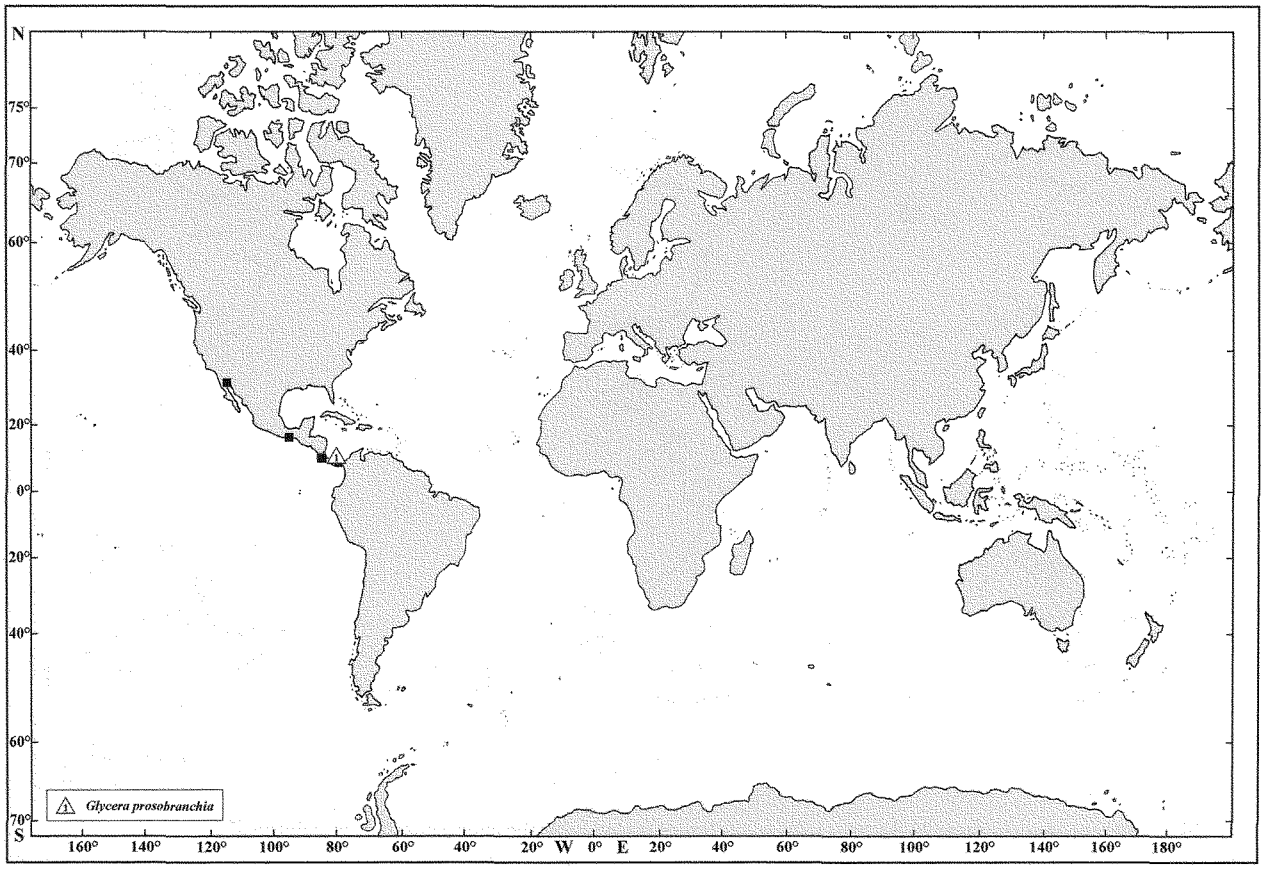

Fig. 123: Distribution of *Glycera prosobranchia* BÖGGEMANN & FIEGE 2001.

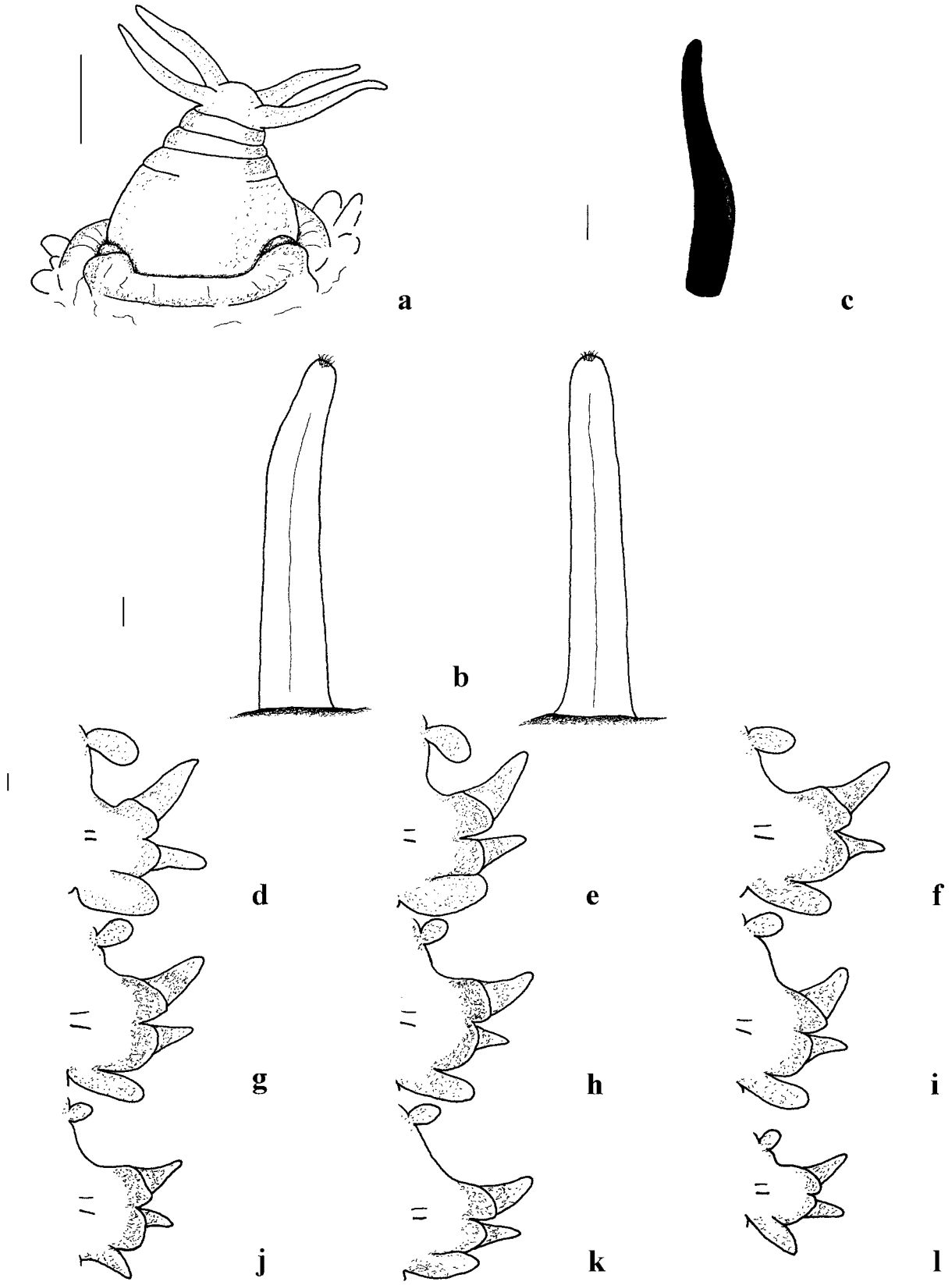

Fig. 124: *Glycerella magellanica* (MCINTOSH 1885). – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: ZMUC-POL-394; scale bars: a = 0.5 mm, b = 0.01 mm, c = 0.05 mm, d-l = 0.1 mm)

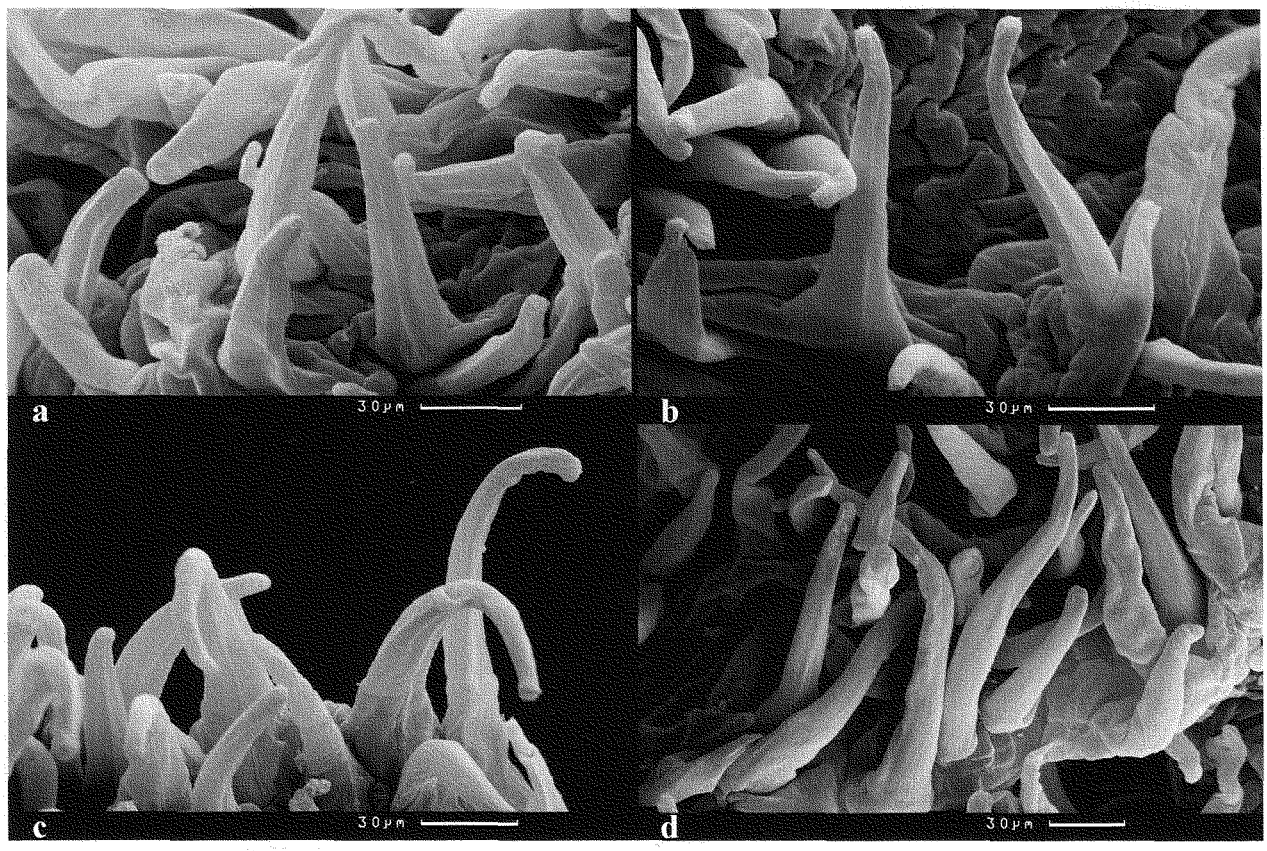

Fig. 125: *Glycerella magellanica* (McIntosh 1885). – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-d: SAM A21224)

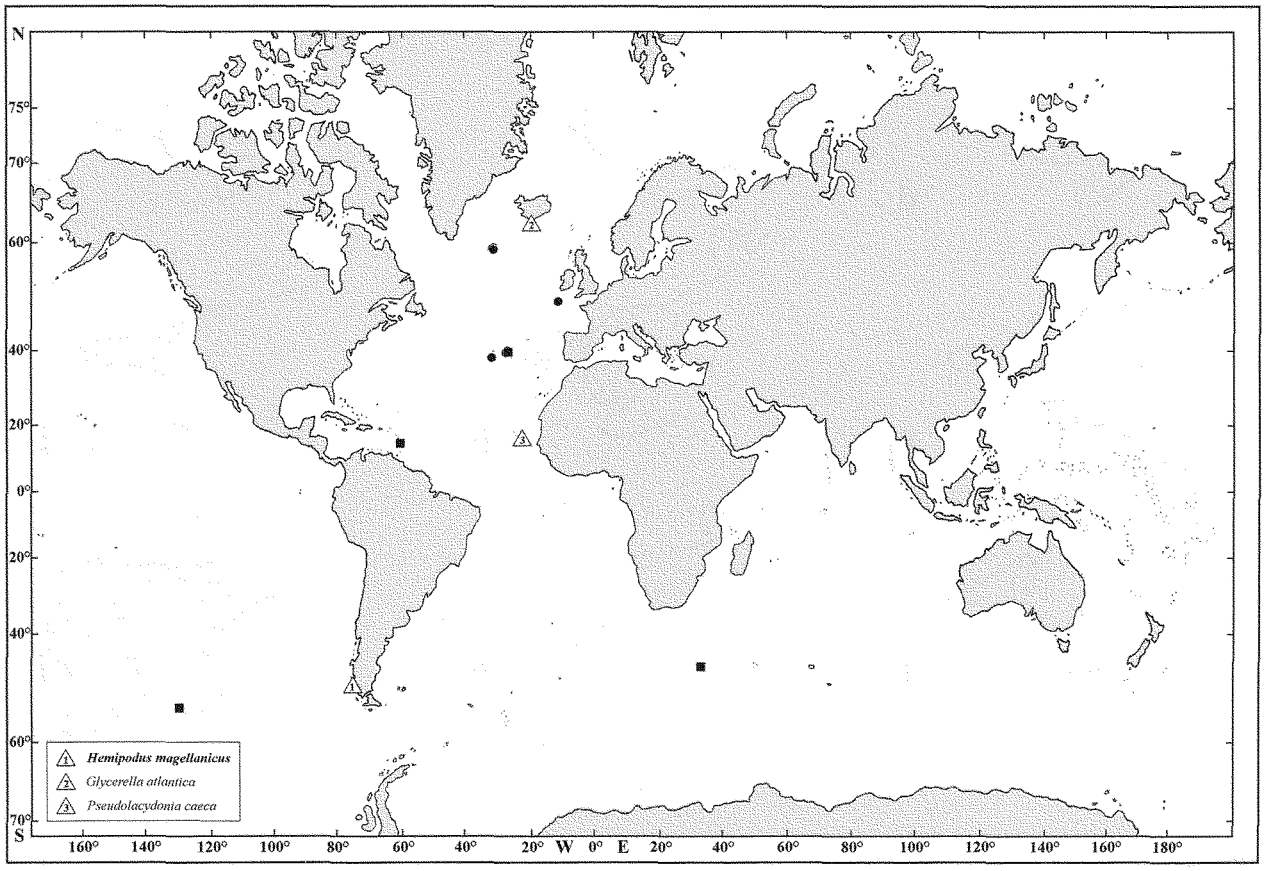

Fig. 126: Distribution of *Glycerella magellanica* (McIntosh 1885).

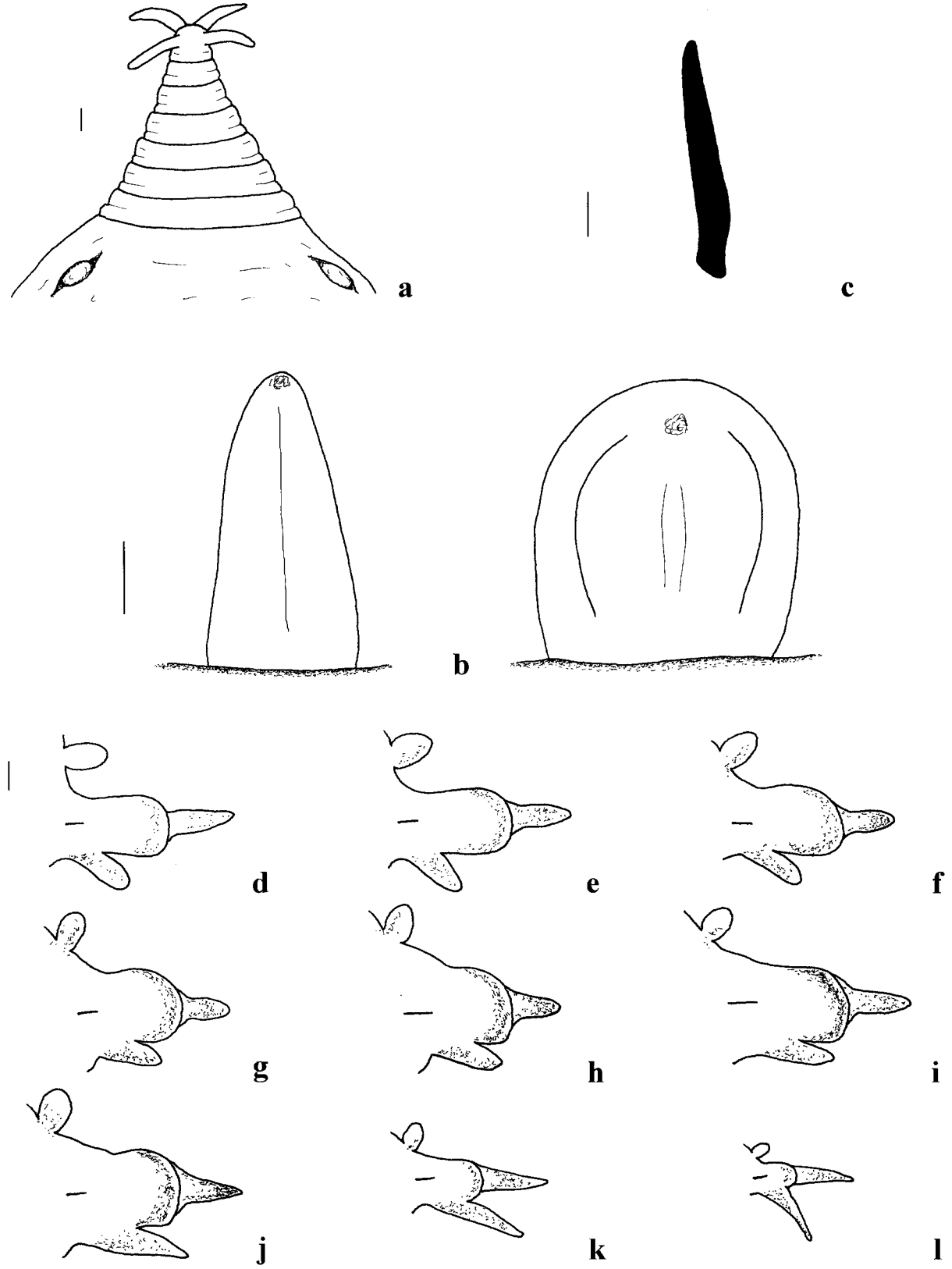

Fig. 127: *Hemipodia simplex* (GRUBE 1857). – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: HZM P-15335; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

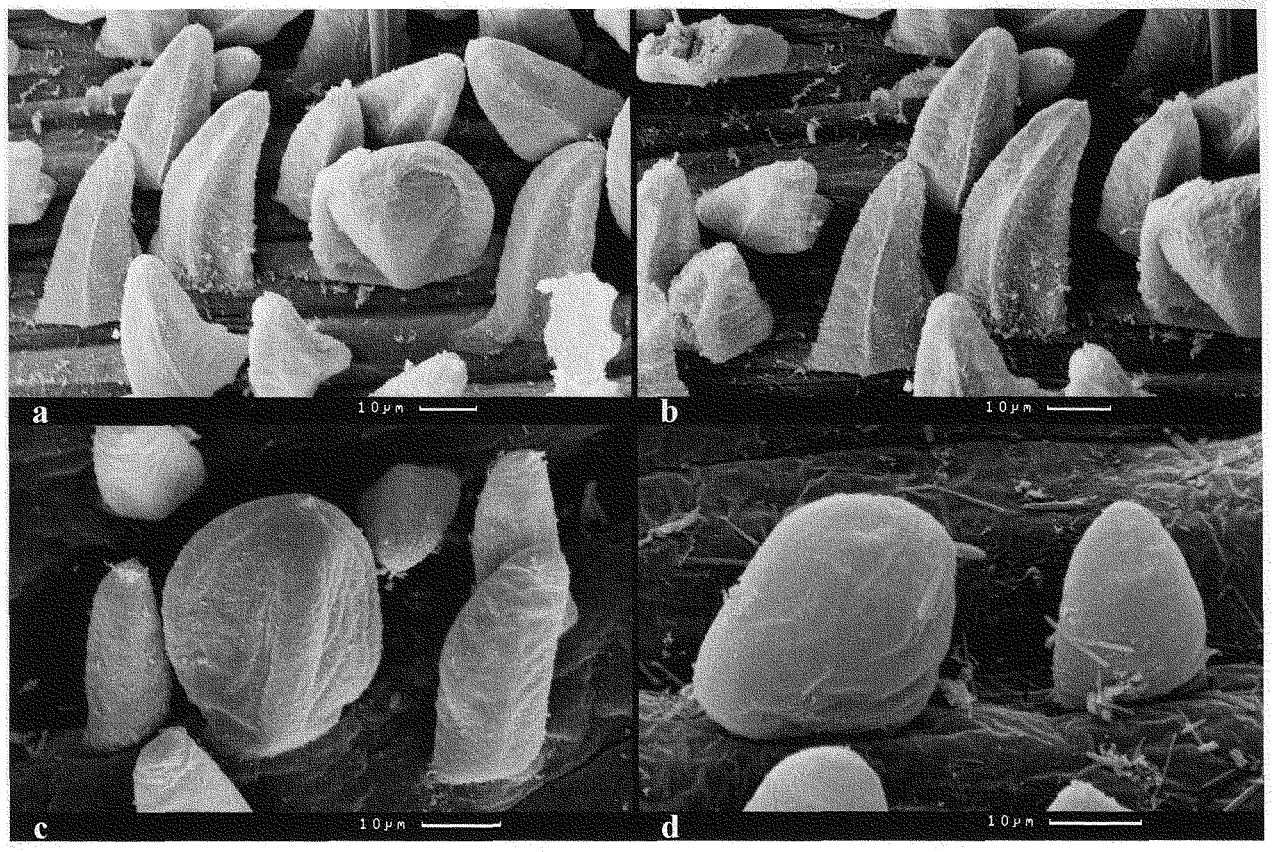

Fig. 128: *Hemipodia simplex* (GRUBE 1857). – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: NZOI F97, c: HZM P-15335, d: NHMW)

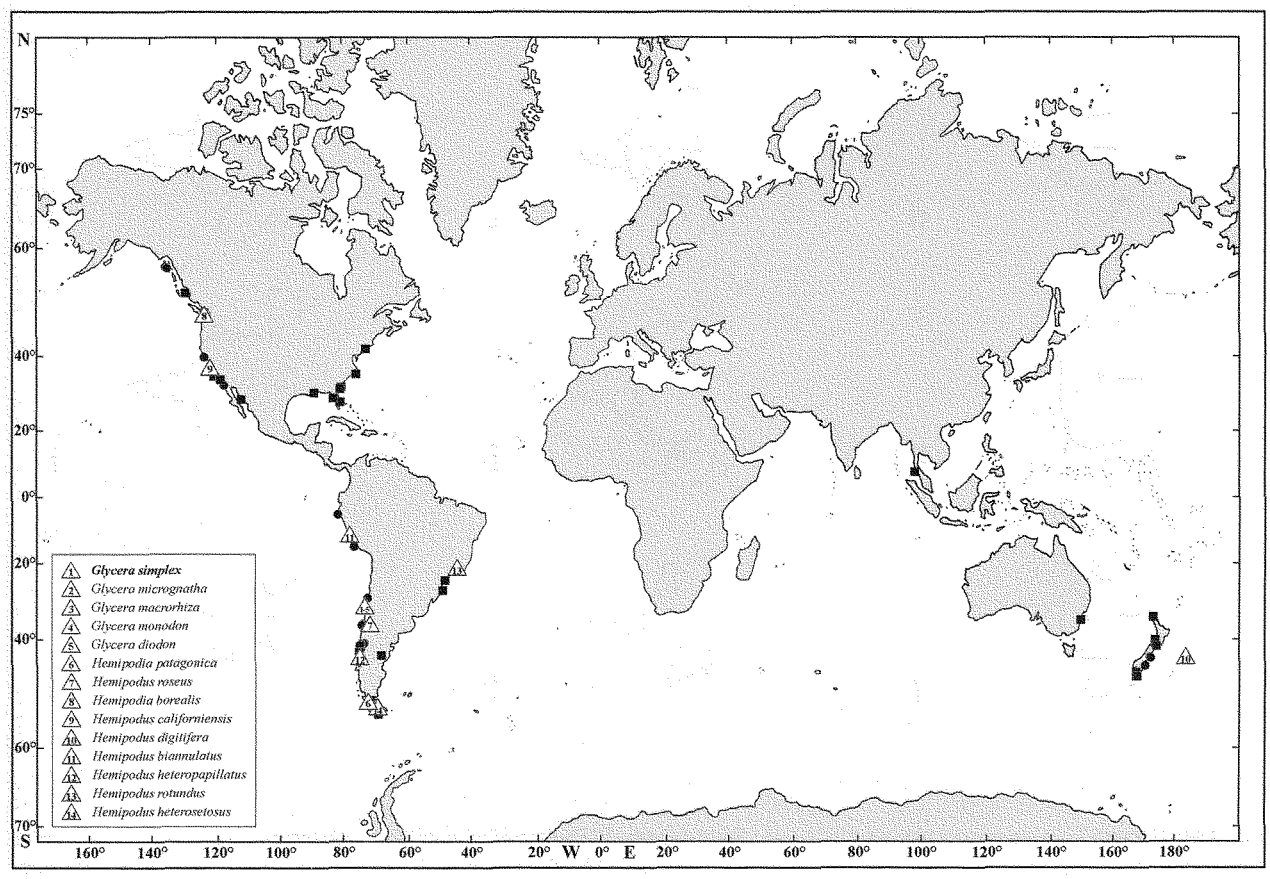

Fig. 129: Distribution of *Hemipodia simplex* (GRUBE 1857).

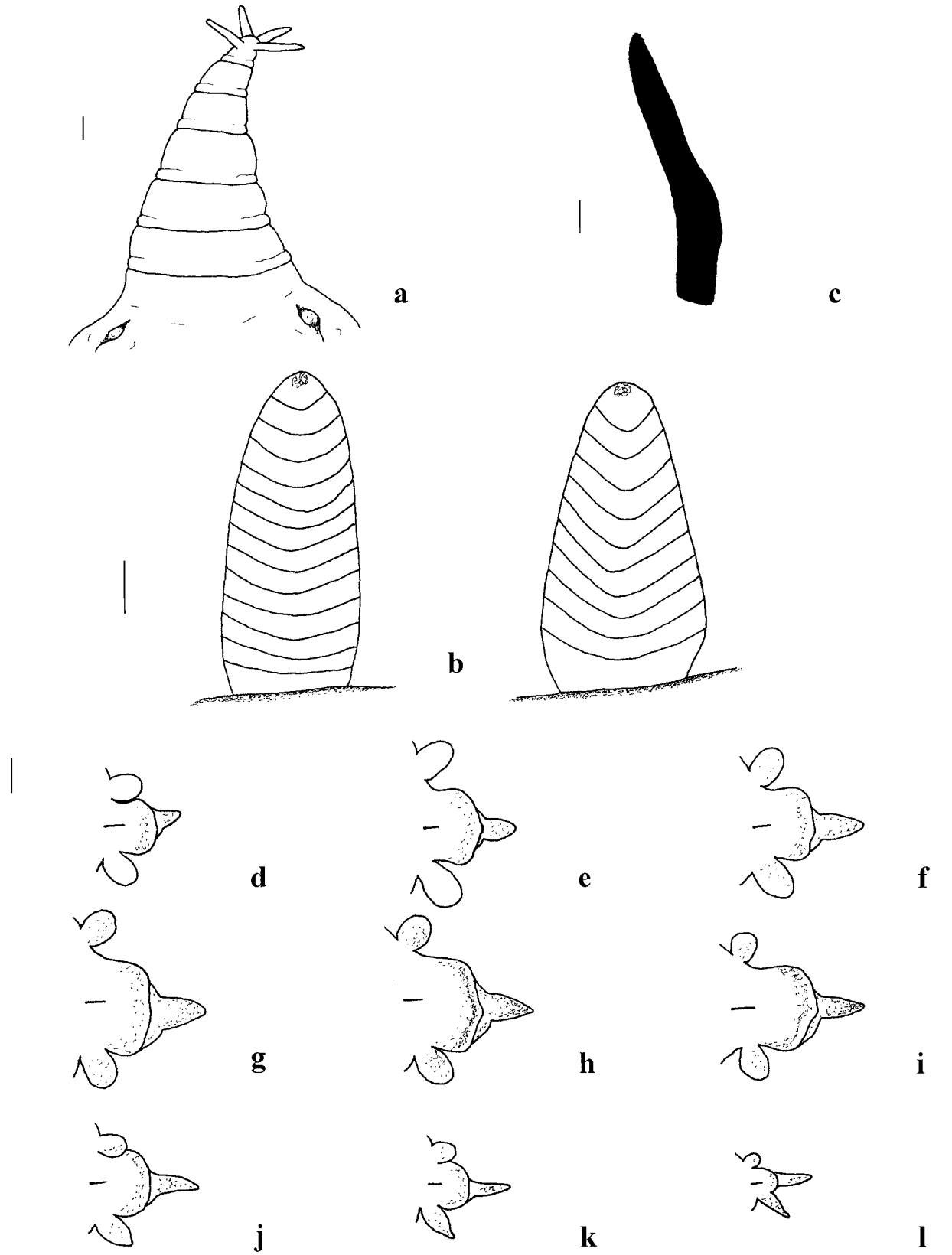

Fig. 130: *Hemipodia yenourensis* (IZUKA 1912). – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: AM W18617; scale bars: a, d-l = 0.1 mm, b = 0.01 mm, c = 0.05 mm)

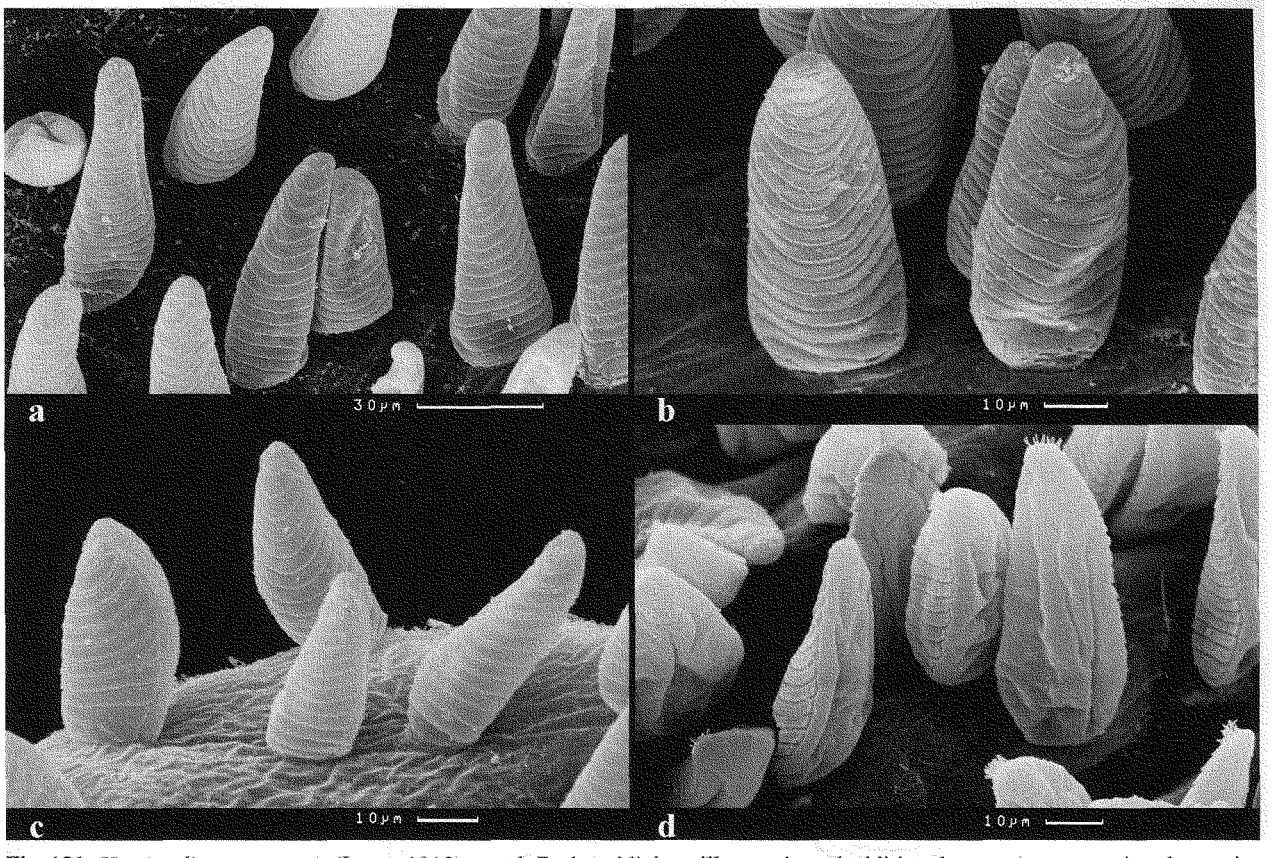

Fig. 131: *Hemipodia yenourensis* (IZUKA 1912). – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a, c: MV F 80188, b, d: MV F 80202)

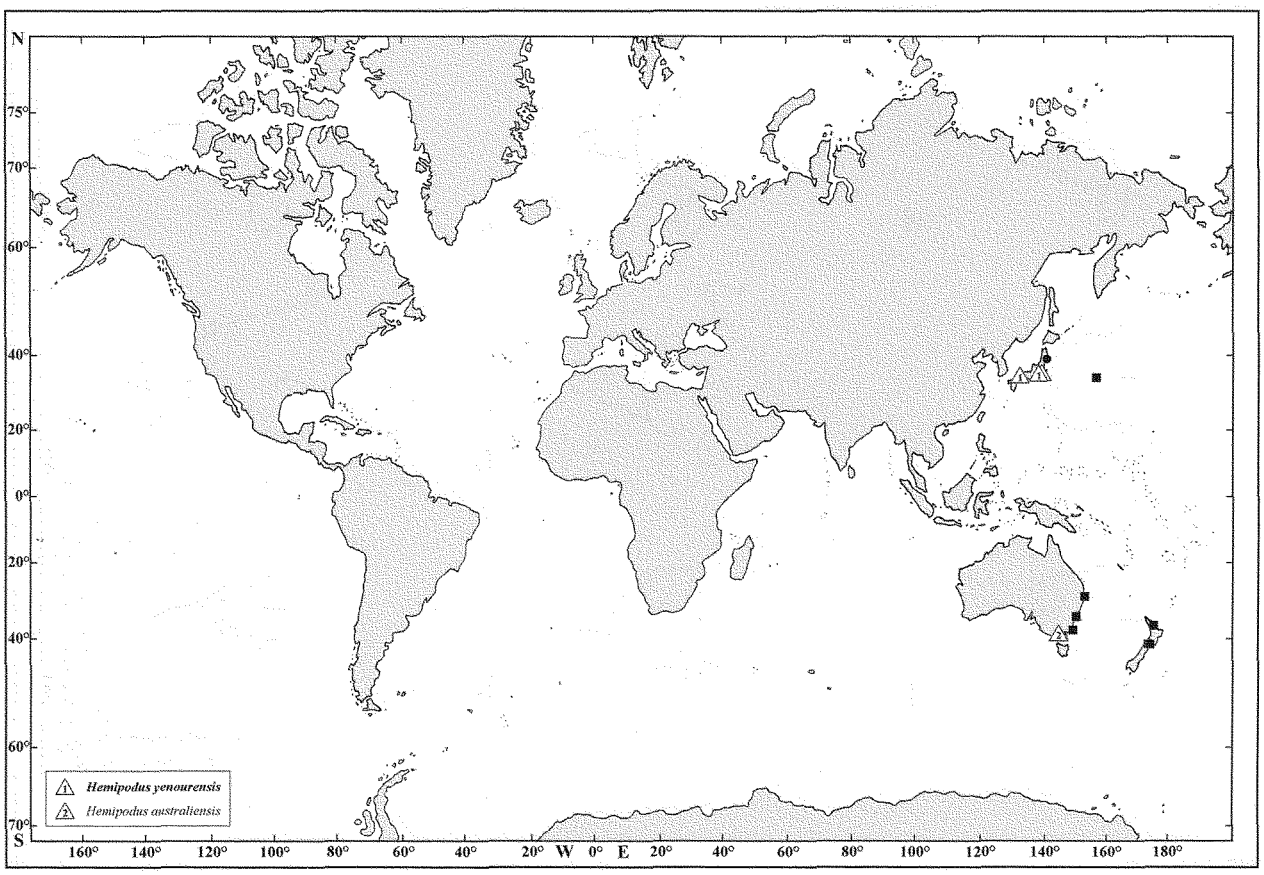

Fig. 132: Distribution of *Hemipodia yenourensis* (IZUKA 1912).

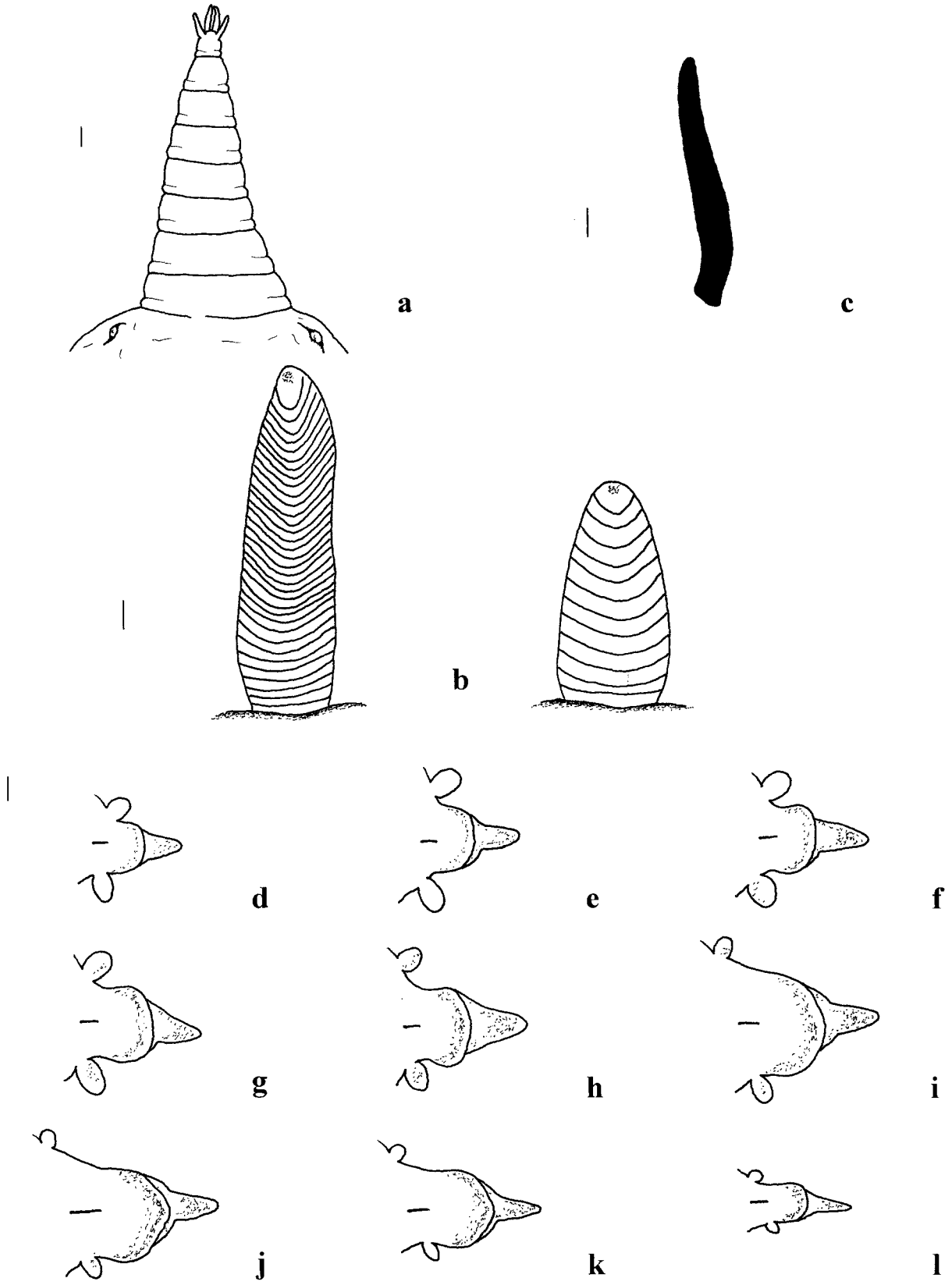

Fig. 133: *Hemipodia californiensis* (HARTMAN 1938). – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a: SMF 2721, b-l: SMF 9178; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

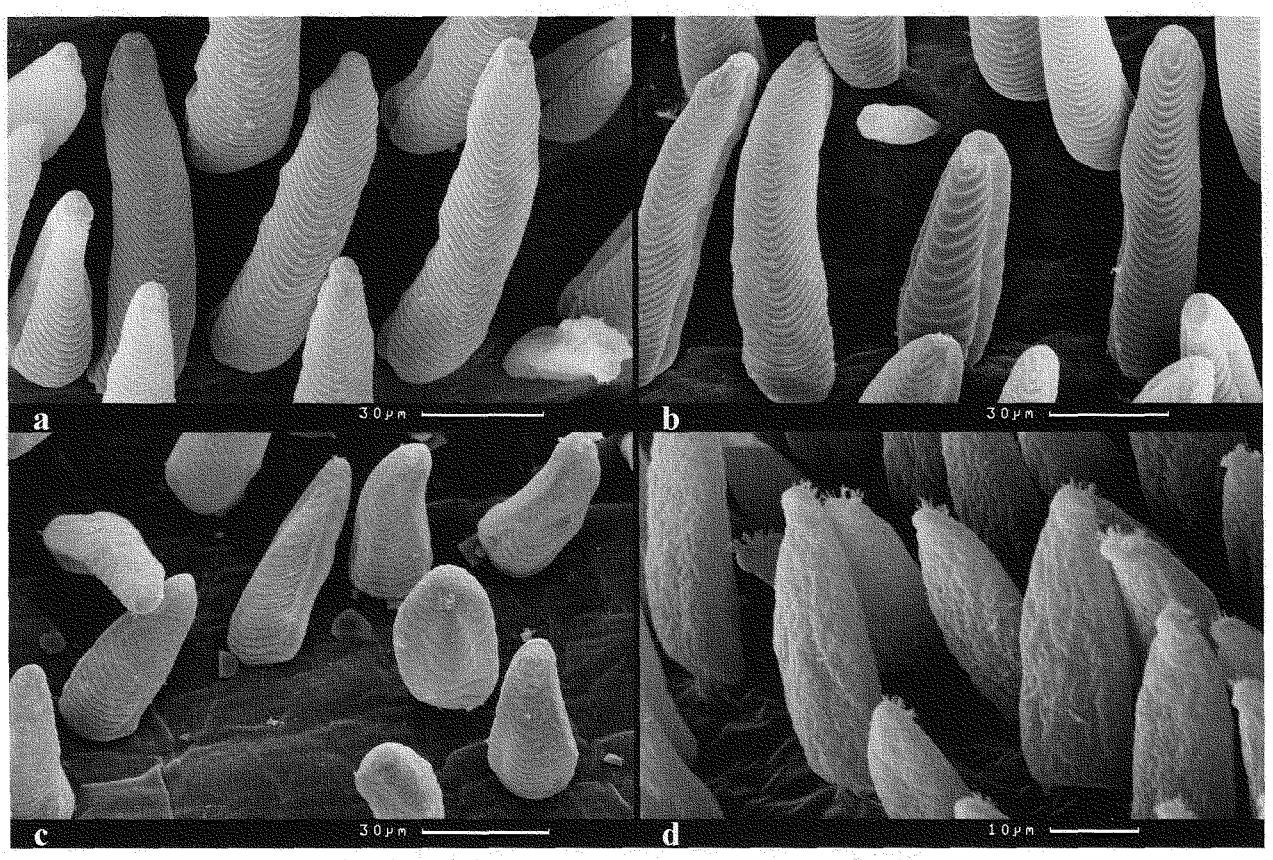

Fig. 134: *Hemipodia californiensis* (HARTMAN 1938). – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: SMF 9178, c: LACM-AHF Poly 768, d: SMF 2712)

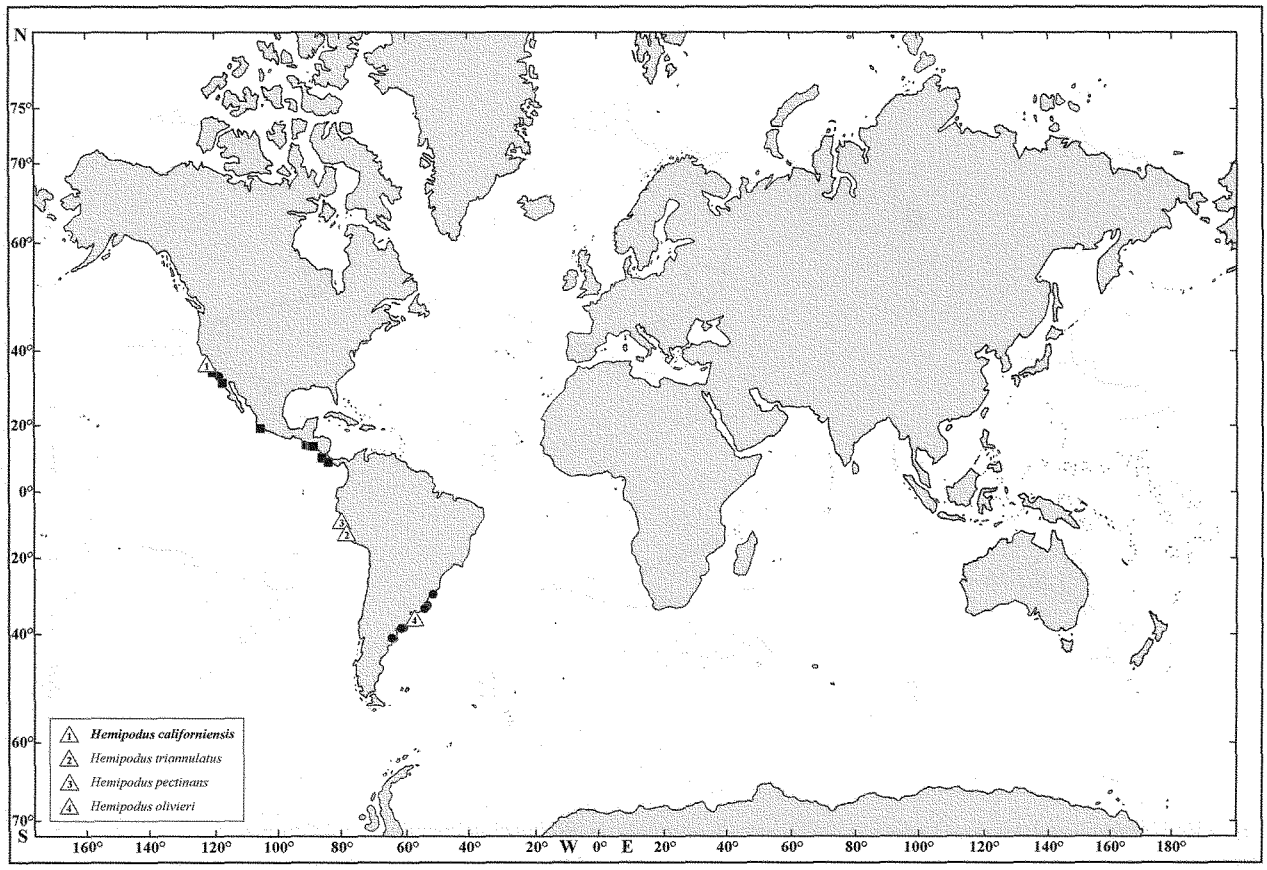

Fig. 135: Distribution of *Hemipodia californiensis* (HARTMAN 1938).

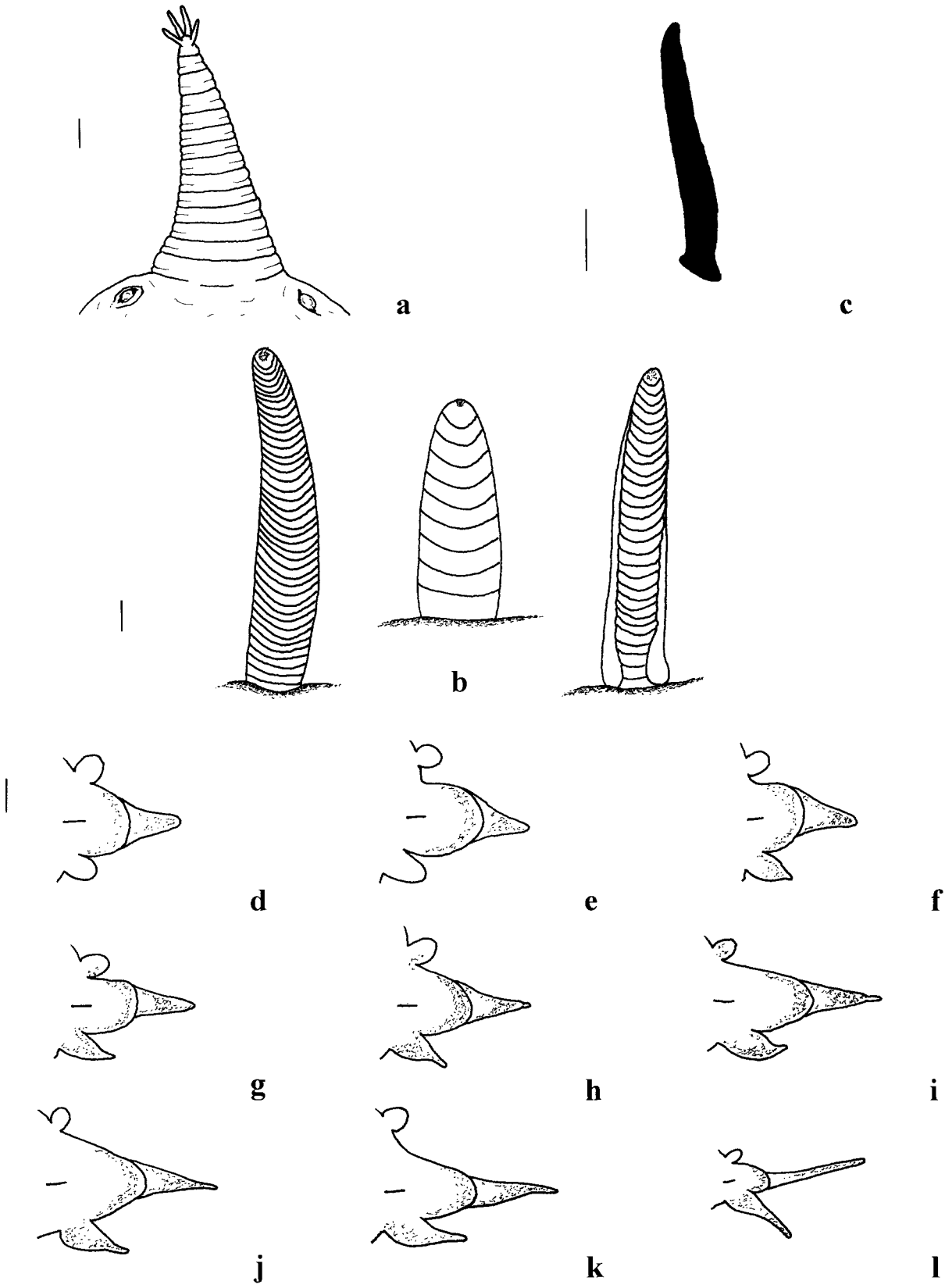

Fig. 136: *Hemipodia pustatula* (FRIEDRICH 1956). – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to posterior parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-c: SMF 2706, d-l: SMF 2702; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

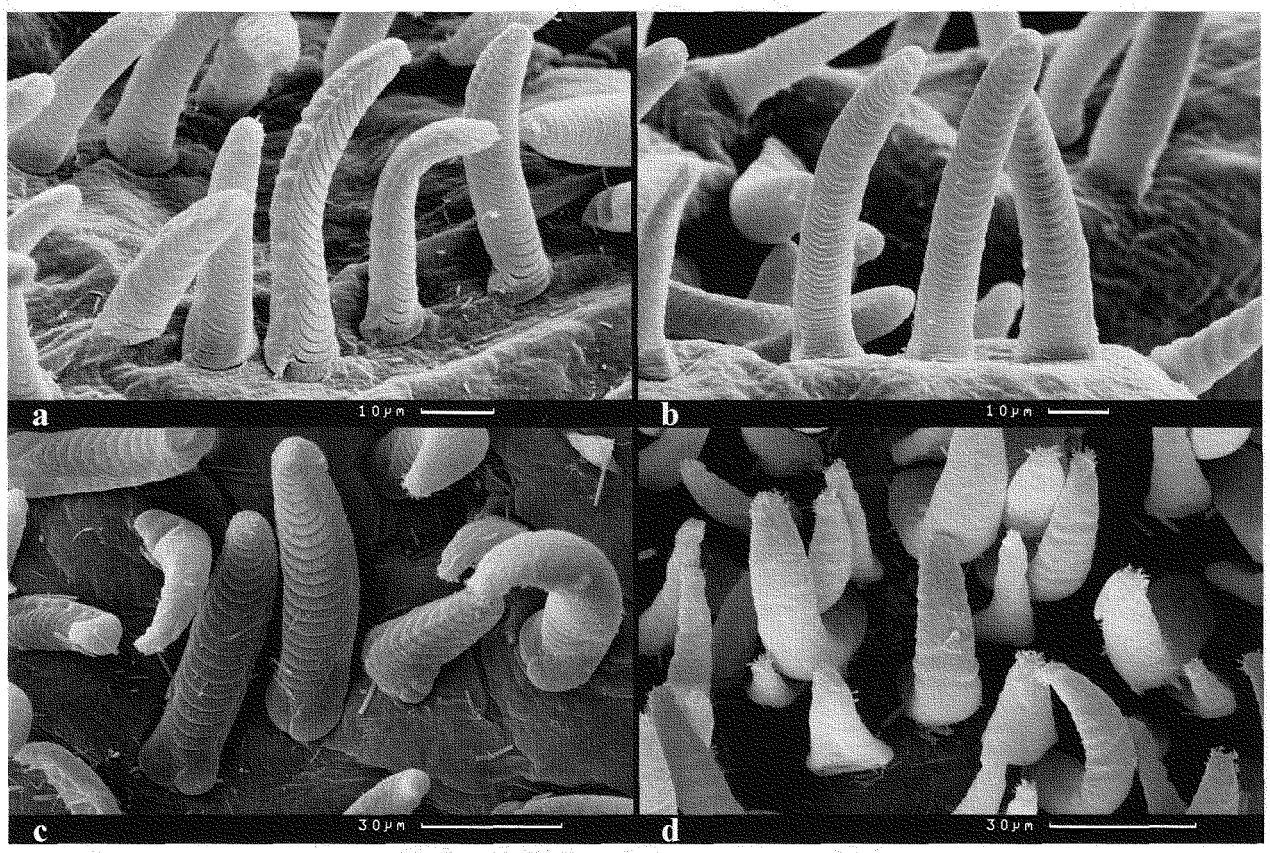

Fig. 137: *Hemipodia pustatula* (FRIEDRICH 1956). – a-d: Proboscidial papillae: main and additional types. (a-c: posterior, d: anterior view; a-b: SMF 9710, c: SMF 2696, d: SMF 2698)

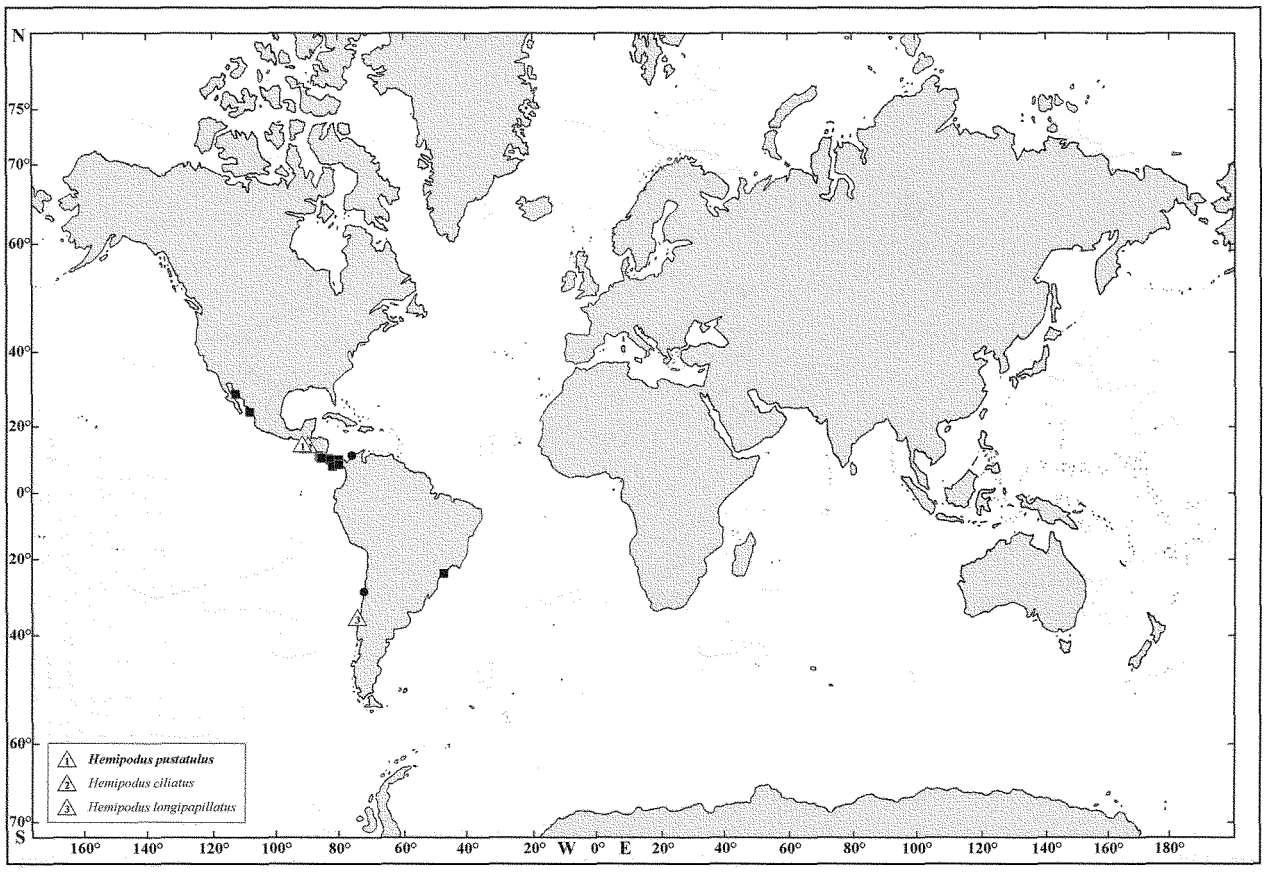

Fig. 138: Distribution of *Hemipodia pustatula* (FRIEDRICH 1956).

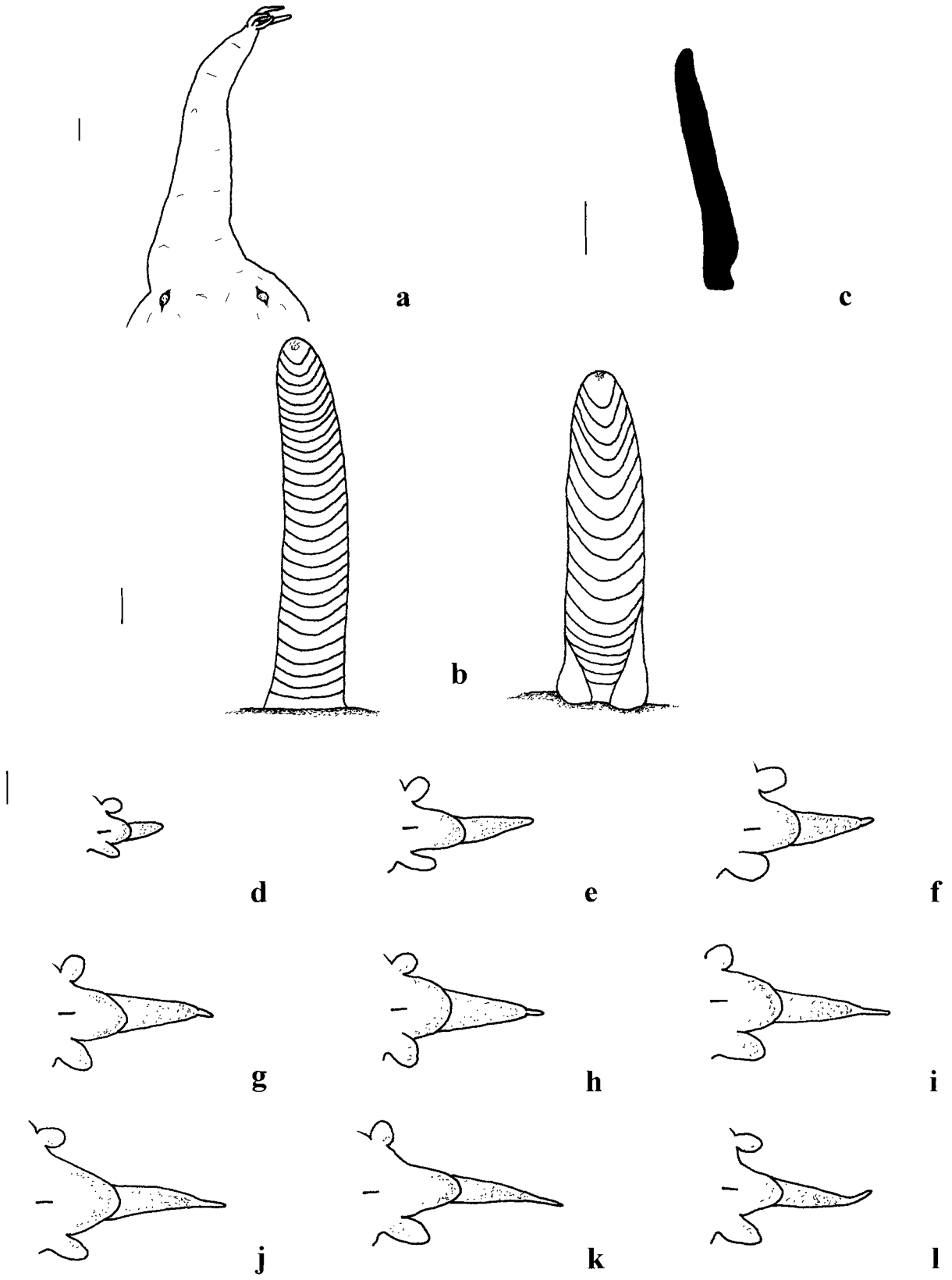

Fig. 139: *Hemipodia armata* (HARTMAN 1950). – a: Prostomium. b: Proboscidial papillae. c: Aileron. d-l: Anterior to mid-body parapodia. (b, d-l: posterior view; d-l: chaetae not shown; a-l: LACM-AHF Poly 767; scale bars: a, c-l = 0.1 mm, b = 0.01 mm)

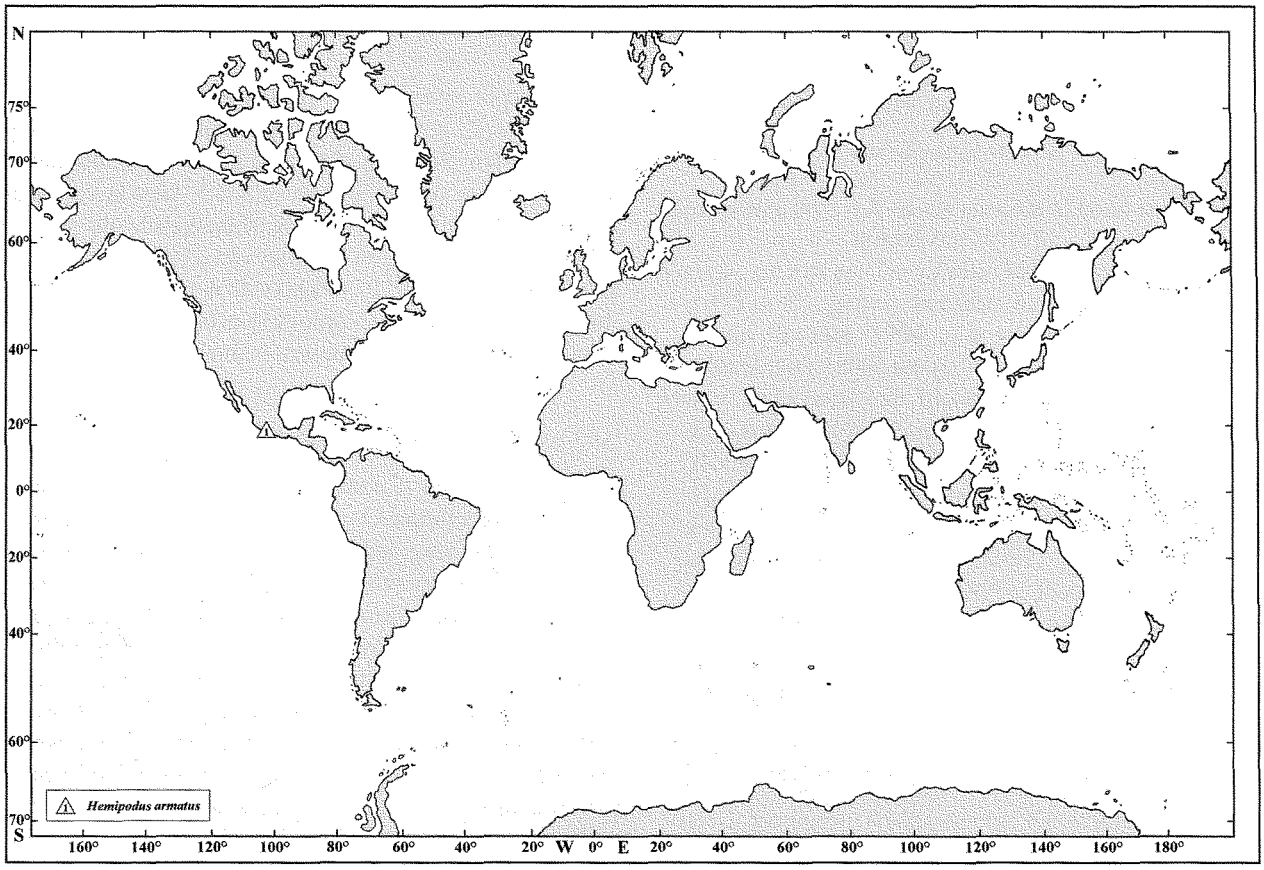

Fig. 140: Distribution of *Hemipodia armata* (HARTMAN 1950).

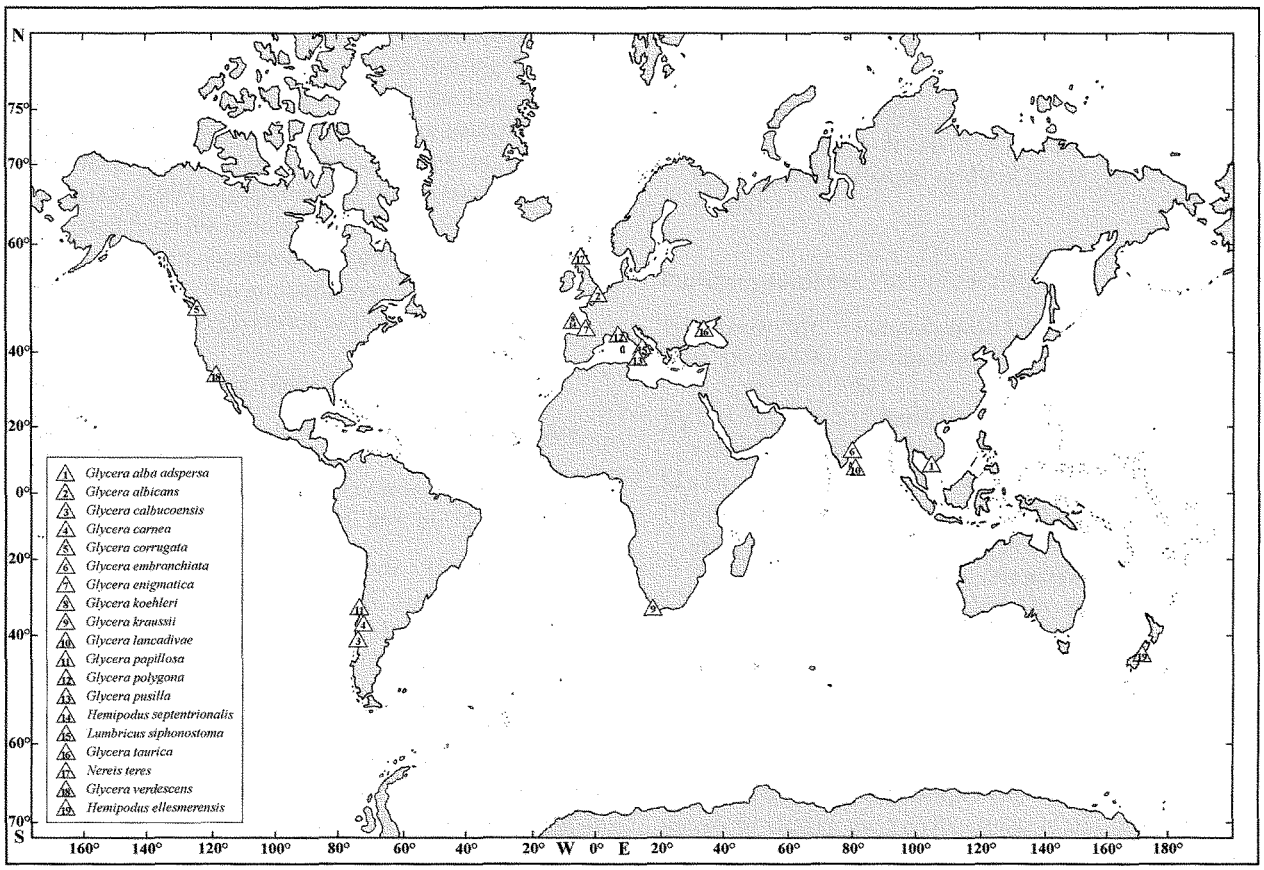

Fig. 141: Loci typici of the Glyceridae incertae sedis and nomina nuda.

Cladistic analysis

This analysis represents the first attempt to clarify the phylogenetic relationship in and between Glyceridae and Goniadidae by using currently available external morphological data. Ecological (e.g. OCKELMANN & VAHL 1970), physiological (e.g. COSTA & PIERCE 1983, CHEN & PRESTON 1987), biochemical (e.g. COOKE et al. 1987), genetic (NICKLAS & HOFFMANN 1979, BRISTOW & VADAS 1991) and internal morphological data are not considered, since these works referred only to a few taxa in each family.

Selection of taxa

The outgroup selection procedure is an important consideration in cladistic analyses. Generally, the outgroup is a well delineated taxon that either constitutes the sister group of or a close relative to the examined taxon. This increases the probability that the observed similarities are really homologous and not simply convergent states. For the glycerids the closely related family Goniadidae KINBERG 1865 may be considered to be the best outgroup. However, both taxa show such great resemblances that one of them might be paraphyletic. EHLERS (1868) and FAUVEL (1923), for example, referred both taxa to one family, and even after HARTMAN (1950) explored their differences, other authors (e.g. DAY 1967, RULLIER 1972) resurrected the subfamilies Glycerinae and Goniadinae. According to FAUCHALD & ROUSE (1997) the most robust test of monophyly for such taxa is to include genera of both families as ingroup taxa whilst rooting the cladograms using other outgroups. Hence, the Lacydoniidae, Nephtyidae and Paralacydoniidae were selected as suitable outgroups, because the analyses of ROUSE & FAUCHALD (1997) demonstrated that these taxa are well delineated from the glycerids and goniadids and are close relatives to them. For the outgroups the families are used as terminal taxa, the goniadids are examined at the generic level and the glycerids at the species level.

Goniadidae KINBERG 1865

Type genus (OD): *Goniada* AUDOUIN & MILNE EDWARDS 1833: 266
Type species (M): *Goniada emerita* AUDOUIN & MILNE EDWARDS 1833: 268; pl. 18, figs. 1-4

Valid genera: *Bathyglycinde* FAUCHALD 1972, *Bookhoutia* MOHAMMAD 1973, *Glycinde* F. MÜLLER 1858, *Goniada* AUDOUIN & MILNE EDWARDS 1833, *Goniadella* HARTMAN 1950, *Goniadides* HARTMANN-SCHRÖDER 1960(b), *Goniadopsis* FAUVEL 1928, *Ophioglycera* VERRILL 1885, *Progoniada* HARTMAN 1965, *Progoniadides* HARTMANN-SCHRÖDER 1974(b).

Main references: DAY (1967), FAUCHALD (1977a), FAUCHALD & ROUSE (1997), GILBERT (1984b), HARTMAN (1950), HARTMANN-SCHRÖDER (1971, 1996), HILBIG (1994b), ROUSE & FAUCHALD (1997).

Lacydoniidae BERGSTRÖM 1914

Type genus (M): *Lacydonia* MARION & BOBRETZKY 1875: 57
Type species (M): *Lacydonia miranda* MARION & BOBRETZKY 1875: 57

Valid genera: *Lacydonia* MARION & BOBRETZKY 1875 (only genus, because the taxon *Pseudolacydonia* RULLIER 1964 is a synonym for *Glycerella* ARWIDSSON 1899, see p. 78).

Main references: BLAKE (1994a), EHLERS (1913), ELIASON (1962), FAUCHALD (1977a), FAUCHALD & ROUSE (1997), GATHOF (1984), HARTMAN (1967), HARTMAN & FAUCHALD (1971), HARTMANN-SCHRÖDER (1971, 1993, 1996), HARTMANN-SCHRÖDER & ROSENFELDT (1988, 1992), LAUBIER (1975), PLEIJEL & FAUCHALD (1993), ROUSE & FAUCHALD (1997), RULLIER (1965a), USCHAKOV (1958a, 1972).

Nephtyidae GRUBE 1850

Type genus (M): *Nephtys* CUVIER 1817: 173
Type species (M): *Nephtys hombergii* SAVIGNY 1818: 314

Valid genera: *Aglaophamus* KINBERG 1865, *Dentinephtys* IMAJIMA & TAKEDA 1987, *Inermonephtys* FAUCHALD 1968, *Micronephtys* FRIEDRICH 1938, *Nephtys* CUVIER 1817

Main references: FAUCHALD (1968), FAUCHALD & ROUSE (1997), HARTMAN (1950), HILBIG (1994c), IMAJIMA & TAKEDA (1985, 1987), NATEEWATHANA & HYLLEBERG (1986), PETTIBONE (1963), RAINER (1991), RAINER & HUTCHINGS (1977), RAINER & KALY (1988), ROUSE & FAUCHALD (1997), TAYLOR (1984).

Paralacydoniidae PETTIBONE 1963

Type genus (M): *Paralacydonia* FAUVEL 1913: 54
Type species (M): *Paralacydonia paradoxa* FAUVEL 1913: 54

Valid genera: *Paralacydonia* FAUVEL 1913 (only genus, with probably only one species).

Main references: AUGENER (1924, 1927c), BLAKE (1994b), DAY (1967), FAUCHALD (1977a), FAUCHALD & ROUSE (1997), FAUVEL (1913, 1914, 1923, 1932, 1936a), GATHOF (1984), HARTMAN (1960, 1968), HORST (1923), KITAMORI (1965), PETTIBONE (1963), ROUSE & FAUCHALD (1997), USCHAKOV (1958b, 1972).

Characters

Most of the external morphological features were selected to clarify the phylogenetic relationship between Goniadidae and Glyceridae. The character observations for the glycerids are based on the result of this study (see

"Systematic section") and for the remaining taxa either on literature information or on examined specimens (pers. obs.). The characters are scored binary as well as multistate (Tab. 1).

1-3. Prostomium. **Goniadidae**: Pointed, conical prostomium (FAUCHALD 1977a), with (FAUVEL 1932, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMAN 1965, HARTMAN & FAUCHALD 1971, HARTMANN-SCHRÖDER 1960b, 1971, 1996, KIRKEGAARD 1995, MOHAMMAD 1973) or without external rings (FAUCHALD 1972, HARTMANN-SCHRÖDER 1974b). **Lacydoniidae**: Oval prostomium without external rings (BLAKE 1994a, EHLERS 1913, ELIASON 1962, FAUCHALD & ROUSE 1997, GATHOF 1984, HARTMAN 1967, HARTMAN & FAUCHALD 1971, HARTMANN-SCHRÖDER 1971, 1993, 1996, HARTMANN-SCHRÖDER & ROSENFELDT 1988, 1992, PLEIJEL & FAUCHALD 1993). **Nephtyidae**: Quadrangular or pentagonal prostomium without external rings (FAUCHALD 1968, IMAJIMA & TAKEDA 1987, PETTIBONE 1963). **Paralacydoniidae**: Blunt, conical prostomium without external rings (AUGENER 1924, BLAKE 1994b, FAUCHALD 1977a, FAUCHALD & ROUSE 1997, FAUVEL 1913, 1914, 1923, 1932, GATHOF 1984, HARTMAN 1960, 1968, HORST 1923, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, 1972).

4-6. Prostomial appendages. **Goniadidae**: Two pairs of terminal, predominantly articulated prostomial appendages (HARTMAN 1950, 1965, HARTMANN-SCHRÖDER 1960b, 1971, 1974b, 1996). **Lacydoniidae**: Two pairs of terminal prostomial appendages (EHLERS 1913, ELIASON 1962, FAUCHALD & ROUSE 1997, GATHOF 1984, LAUBIER 1975, PLEIJEL & FAUCHALD 1993) and one additional median antenna (BLAKE 1994a, ELIASON 1962, FAUCHALD & ROUSE 1997, HARTMANN-SCHRÖDER 1993, 1996, HARTMANN-SCHRÖDER & ROSENFELDT 1988, 1992, PLEIJEL & FAUCHALD 1993). **Nephtyidae**: One pair of terminal (when present) and one pair of ventro-lateral prostomial appendages (FAUCHALD 1968, IMAJIMA & TAKEDA 1987, PETTIBONE 1963). **Paralacydoniidae**: Two pairs of terminal, biarticulated prostomial appendages (DAY 1967, FAUCHALD 1977a, FAUVEL 1913, 1914, 1923, 1932, GATHOF 1984, HORST 1923, KITAMORI 1965, USCHAKOV 1958b, 1972, pers. obs.).

7. Eyes. **Goniadidae**: Species with (FAUVEL 1928, 1932, HARTMANN-SCHRÖDER 1971, 1974b, 1996, INTES & LE LŒUFF 1975) or without eyes (DAY 1967, FAUCHALD 1972, GRANADOS-BARBA & SOLÍS-WEISS 1997, GRAVIER 1904, HARTMAN 1965, HARTMANN-SCHRÖDER 1960b, 1971, 1986, 1996, MOHAMMAD 1973). **Lacydoniidae**: Species with (EHLERS 1913, GATHOF 1984, HARTMAN 1967, HARTMANN-SCHRÖDER 1971, 1996, HARTMANN-SCHRÖDER & ROSENFELDT 1988, LAUBIER 1975, MARION & BOBRETZKY 1875, PLEIJEL & FAUCHALD 1993) or without eyes (BLAKE 1994a, ELIASON 1962, HARTMAN & FAUCHALD 1971, HARTMANN-SCHRÖDER 1993, HARTMANN-SCHRÖDER & ROSENFELDT 1992, PLEIJEL & FAUCHALD 1993, USCHAKOV 1958b, 1972). **Nephtyidae**: Species with or without eyes (FAUCHALD 1968, IMAJIMA & TAKEDA 1985, 1987, NATEEWATHANA & HYLLEBERG 1986, PETTIBONE 1963, RAINER & HUTCHINGS 1977, RAINER & KALY 1988, TAYLOR 1984). **Paralacydoniidae**: Absent (BLAKE 1994b, FAUVEL 1913, 1914, 1923, 1932, 1936a, GATHOF 1984, HARTMAN 1960, 1968, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, 1972, pers. obs.).

8. Peristomium. **Goniadidae**: Limited to lips (FAUCHALD & ROUSE 1997). **Lacydoniidae**: Distinct (pers. obs.). **Nephtyidae**: Limited to lips (FAUCHALD & ROUSE 1997, HARTMAN 1950). **Paralacydoniidae**: Distinct (BLAKE 1994b, DAY 1967, FAUVEL 1913, 1914, 1923, 1932, 1936a, GATHOF 1984, HARTMAN 1960, 1968, HORST 1923, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, 1972, pers. obs.).

9. Segmentation. **Goniadidae**: Simple (FAUVEL 1932, HARTMANN-SCHRÖDER 1971, 1974b, 1996) or biannulate (GILBERT 1984b, GRAVIER 1904, HARTMANN-SCHRÖDER 1960b, 1962b, pers. obs.). **Lacydoniidae**: Triannulate (HARTMAN 1967). **Nephtyidae**: Simple (pers. obs.). **Paralacydoniidae**: Biannulate (FAUVEL 1913, 1914, 1923, pers. obs.).

10. First segment. **Goniadidae**: Neuropodia only, sometimes limited (GILBERT 1984b, pers. obs.). **Lacydoniidae**: Parapodia absent (BLAKE 1994a, EHLERS 1913, ELIASON 1962, GATHOF 1984, HARTMAN & FAUCHALD 1971, HARTMANN-SCHRÖDER 1971, 1993, 1996, HARTMANN-SCHRÖDER & ROSENFELDT 1988, 1992, LAUBIER 1975, MARION & BOBRETZKY 1875, PLEIJEL & FAUCHALD 1993, USCHAKOV 1958a, 1972). **Nephtyidae**: Noto- and neuropodia present (FAUCHALD & ROUSE 1997). **Paralacydoniidae**: Only neuropodia present (FAUCHALD & ROUSE 1997, GATHOF 1984, pers. obs.).

11-26. Parapodia. **Goniadidae**: Species mainly with uni- and biramous parapodia with (FAUVEL 1932, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMANN-SCHRÖDER 1962b, 1971, 1996, PERKINS 1980) or without transformation region (FAUCHALD 1972, 1977a, HARTMAN 1974a, HARTMANN-SCHRÖDER 1960b, 1962b, 1971, 1996, HILBIG 1994b, KIRKEGAARD 1995, MOHAMMAD 1973); two genera only with uniramous parapodia (FAUCHALD 1977a, HARTMANN-SCHRÖDER 1974b); noto- (if present) and neuropodium clearly separated (FAUCHALD 1972, FAUVEL 1932, HARTMANN-SCHRÖDER 1960b, 1971, 1996, MOHAMMAD 1973); prechaetal lobes conical (FAUVEL 1928, HARTMANN-SCHRÖDER 1971, 1996, pers. obs.) or sometimes reduced (HARTMANN-SCHRÖDER 1960b, 1971, 1996, pers. obs); sometimes bilobed neuropodial prechaetal lobes present (FAUCHALD 1972, FAUVEL 1932, GRANADOS-BARBA &

SOLÍS-WEISS 1997, HARTMANN-SCHRÖDER 1971, 1996, MOHAMMAD 1973, PETTIBONE 1970); notopodial postchaetal lobes short, rounded (FAUVEL 1932, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMAN & FAUCHALD 1971, MOHAMMAD 1973) or sometimes reduced (HARTMANN-SCHRÖDER 1960b, 1971, 1996, pers. obs); neuropodial postchaetal lobes short, rounded (HARTMAN & FAUCHALD 1971, MOHAMMAD 1973) or distinctly triangular (FAUCHALD 1972, FAUVEL 1932, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMANN-SCHRÖDER 1971, 1996). **Lacydoniidae**: First three parapodia uniramous, following parapodia biramous (BLAKE 1994a, ELIASON 1962, GATHOF 1984, HARTMANN-SCHRÖDER 1971, 1993, 1996, HARTMANN-SCHRÖDER & ROSENFELDT 1988, 1992, LAUBIER 1975, MARION & BOBRETZKY 1875, PLEIJEL & FAUCHALD 1993, USCHAKOV 1958a, 1972); noto- and neuropodium clearly separated (HARTMANN-SCHRÖDER 1993, PLEIJEL & FAUCHALD 1993, USCHAKOV 1958a, 1972); prechaetal and postchaetal lobes short, rounded (ELIASON 1962, HARTMANN-SCHRÖDER 1993, pers. obs.). **Nephtyidae**: Species with biramous parapodia only (FAUCHALD 1968, IMAJIMA & TAKEDA 1987, RAINER & HUTCHINGS 1977, TAYLOR 1984); noto- and neuropodium clearly separated (FAUCHALD 1968, HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963); prechaetal lobes short, rounded (FAUCHALD 1968, IMAJIMA & TAKEDA 1987, RAINER & HUTCHINGS 1977); sometimes bilobed prechaetal lobes present (FAUCHALD 1968, RAINER & HUTCHINGS 1977); postchaetal lobes mainly short, rounded (FAUCHALD 1968, IMAJIMA & TAKEDA 1987, RAINER & HUTCHINGS 1977), but some species with long, rounded neuropodial postchaetal lobes (FAUCHALD 1968, RAINER & HUTCHINGS 1977); acicular lobes present (FAUCHALD 1968, HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963). **Paralacydoniidae**: First parapodium uniramous, following parapodia biramous (AUGENER 1924, BLAKE 1994b, DAY 1967, FAUVEL 1913, 1914, 1923, 1932, 1936a, GATHOF 1984, HARTMAN 1960, 1968, HORST 1923, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, 1972, pers. obs.); noto- and neuropodium clearly separated (AUGENER 1924, BLAKE 1994b, DAY 1967, FAUVEL 1913, 1914, 1923, 1932, HARTMAN 1960, 1968, HORST 1923, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, 1972, pers. obs.); prechaetal lobes conical (KITAMORI 1965, PETTIBONE 1963, pers. obs.); bilobed prechaetal lobes present (FAUVEL 1932, USCHAKOV 1958b, 1972, pers. obs.); postchaetal lobes short, rounded (FAUVEL 1932, KITAMORI 1965, PETTIBONE 1963, pers. obs.).

27. Cilia in the interramal region. **Goniadidae**: Absent (pers. obs.). **Lacydoniidae**: Absent (pers. obs.). **Nephtyidae**: Absent (IMAJIMA & TAKEDA 1987, RAINER & HUTCHINGS 1977) or present (IMAJIMA & TAKEDA 1987, PETTIBONE 1963, RAINER & HUTCHINGS 1977). **Paralacydoniidae**: Present (AUGENER 1924, BLAKE 1994b, DAY 1967, FAUVEL 1914, 1932, HORST 1923, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, 1972, pers. obs.).

28-30. Dorsal cirri. **Goniadidae**: Inserted on body wall near parapodial base (FAUCHALD 1972, FAUVEL 1932, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMANN-SCHRÖDER 1971, 1974b, 1996, MOHAMMAD 1973); starting from 1st (FAUCHALD 1972, MOHAMMAD 1973, pers. obs.) or 2nd parapodia (GILBERT 1984b, HARTMAN 1965, pers. obs.). **Lacydoniidae**: Inserted dorsally on notopodia (BLAKE 1994a, EHLERS 1913, ELIASON 1962, LAUBIER 1975); starting from 1st parapodia (BLAKE 1994a, ELIASON 1962, FAUVEL 1923, HARTMANN-SCHRÖDER 1971, 1996, LAUBIER 1975, MARION & BOBRETZKY 1875, PLEIJEL & FAUCHALD 1993). **Nephtyidae**: Inserted ventrally on notopodia (FAUCHALD 1968, HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963); starting from 1st (FAUCHALD 1968, IMAJIMA & TAKEDA 1987, TAYLOR 1984) or 2nd parapodia (FAUCHALD 1968, PETTIBONE 1963, TAYLOR 1984). **Paralacydoniidae**: Inserted dorsally on notopodia (AUGENER 1924, FAUVEL 1913, 1914, 1923, 1932, HARTMAN 1960, HORST 1923, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, pers. obs.); starting from 2nd parapodia (pers. obs.).

31. Ventral cirri. **Goniadidae**: All more or less slender triangular to digitiform (FAUCHALD 1972, FAUVEL 1932, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMAN 1974a, HARTMANN-SCHRÖDER 1960b, 1971, 1974b, 1996, MOHAMMAD 1973). **Lacydoniidae**: All more or less slender triangular to digitiform (BLAKE 1994a, EHLERS 1913, ELIASON 1962, GATHOF 1984, HARTMANN-SCHRÖDER 1971, 1993, 1996, HARTMANN-SCHRÖDER & ROSENFELDT 1988, 1992, LAUBIER 1975, PLEIJEL & FAUCHALD 1993, USCHAKOV 1958a, 1972). **Nephtyidae**: All more or less slender triangular to digitiform (FAUCHALD 1968, IMAJIMA & TAKEDA 1987, PETTIBONE 1963). **Paralacydoniidae**: All more or less slender triangular to digitiform (AUGENER 1924, DAY 1967, FAUVEL 1913, 1914, 1923, 1932, 1936a, HARTMAN 1960, 1968, HORST 1923, KITAMORI 1965, PETTIBONE 1963, pers. obs.).

32-36. Branchiae. **Goniadidae**: Absent (FAUCHALD 1977a, FAUCHALD & ROUSE 1997, HARTMANN-SCHRÖDER 1971, 1996). **Lacydoniidae**: Absent (FAUCHALD & ROUSE 1997, HARTMAN 1967). **Nephtyidae**: Mainly digitiform interramal branchiae present (FAUCHALD 1968, HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963); only one genus with reduced or absent branchiae (FAUCHALD 1968, FRIEDRICH 1938, HARTMAN 1950, PETTIBONE 1963, RAINER & HUTCHINGS 1977). **Paralacydoniidae**: Absent (AUGENER 1924, DAY 1967, FAUCHALD & ROUSE 1997, pers. obs.).

37-42. Chaetae. **Goniadidae**: Notopodia with simple and neuropodia with compound chaetae, two genera only with compound chaetae (FAUCHALD 1977a, HARTMANN-SCHRÖDER 1974b); compound chaetae spinigerous and/or falcigerous (FAUCHALD 1972, 1977a, GILBERT 1984b, HARTMAN 1971, HARTMANN-SCHRÖDER 1960b, 1962b, 1974b, INTES & LE LŒUFF 1975, MOHAMMAD 1973); simple chaetae capillary and/or aciculary (FAUCHALD 1972, 1977a, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMAN & FAUCHALD 1971, HARTMANN-SCHRÖDER 1960b, 1971, 1996, KIRKEGAARD 1995, MOHAMMAD 1973, PETTIBONE 1970). **Lacydoniidae**: Notopodia with simple capillaries and neuropodia with spinigerous compound chaetae (BLAKE 1994a, EHLERS 1913, ELIASON 1962, GATHOF 1984, HARTMAN 1967, HARTMAN & FAUCHALD 1971, HARTMANN-SCHRÖDER 1971, 1993, 1996, HARTMANN-SCHRÖDER & ROSENFELDT 1988, 1992, LAUBIER 1975, MARION & BOBRETZKY 1875, PLEIJEL & FAUCHALD 1993, PLEIJEL & FAUCHALD 1993, USCHAKOV 1958b, 1972). **Nephtyidae**: Noto- and neuropodia mostly with simple capillaries (FAUCHALD 1968, HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963, RAINER & HUTCHINGS 1977). **Paralacydoniidae**: Notopodia with simple capillaries and neuropodia mainly with spinigerous compound chaetae (AUGENER 1924, BLAKE 1994b, DAY 1967, FAUVEL 1913, 1914, 1923, 1932, 1936a, GATHOF 1984, HARTMAN 1960, 1968, HORST 1923, KITAMORI 1965, PETTIBONE 1963, USCHAKOV 1958b, 1972, pers. obs.).

43. Anal cirri. **Goniadidae**: Two anal cirri present (FAUCHALD & ROUSE 1997, HARTMANN-SCHRÖDER 1974b, MOHAMMAD 1973, pers. obs.). **Lacydoniidae**: Three anal cirri present (BLAKE 1994a, HARTMANN-SCHRÖDER 1993, HARTMANN-SCHRÖDER & ROSENFELDT 1988, PLEIJEL & FAUCHALD 1993, pers. obs.). **Nephtyidae**: One anal cirrus present (PETTIBONE 1963, RAINER & HUTCHINGS 1977, RAINER & KALY 1988, pers. obs.). **Paralacydoniidae**: Three anal cirri present (KITAMORI 1965, pers. obs.).

44-50. Jaw organs. **Goniadidae**: Ring of macro- and micrognaths (FAUCHALD 1977a, FAUCHALD & ROUSE 1997, HARTMANN-SCHRÖDER 1974b, MOHAMMAD 1973, pers. obs.), sometimes additional chevrons present (FAUCHALD 1977a, HARTMANN-SCHRÖDER 1971, 1996, pers. obs.). **Lacydoniidae**: Absent (BLAKE 1994a, FAUCHALD 1977a, FAUCHALD & ROUSE 1997, HARTMANN-SCHRÖDER 1971, 1996, pers. obs.). **Nephtyidae**: 1 pair of paragnaths present (FAUCHALD 1968, HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963). **Paralacydoniidae**: Absent (AUGENER 1924, 1927c, BLAKE 1994b, DAY 1967, FAUVEL 1913, 1914, 1923, 1932, 1936a, HARTMAN 1960, 1968, PETTIBONE 1963, pers. obs.).

51-63. Proboscidial papillae. **Goniadidae**: One or several different kinds of sclerotized papillae (FAUCHALD 1972, 1977a, FAUVEL 1932, GRANADOS-BARBA & SOLÍS-WEISS 1997, HARTMAN 1965, 1974a, HARTMANN-SCHRÖDER 1960b, 1962b, INTES & LE LŒUFF 1975, MOHAMMAD 1973, pers. obs.). **Lacydoniidae**: Absent (FAUCHALD & ROUSE 1997, pers. obs.). **Nephtyidae**: Terminal long papillae (HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963, RAINER & HUTCHINGS 1977) and mainly additional soft conical to digitiform proboscidial papillae without ridges (FAUCHALD 1968, HARTMAN 1950, IMAJIMA & TAKEDA 1987, PETTIBONE 1963, RAINER & HUTCHINGS 1977). **Paralacydoniidae**: Absent (AUGENER 1924, 1927c, HARTMAN 1960, USCHAKOV 1958b, 1972, pers. obs.).

Tab. 1: Summary of characters.

nr.	Character and character states
1	Prostomium: **0**. Pointed, conical; **1**. Blunt, conical; **2**. Oval; **3**. Quadrangular or pentagonal
2	Rings on prostomium: **0**. Absent; **1**. Present
3	Number of rings on prostomium: **0**. 4; **1**. 7-13; **2**. 14-17; **3**. 18-28
4	Inseration of prostomial appendages: **0**. All terminally; **1**. 1 pair terminally (if present) and 1 pair ventro-laterally
5	Prostomial appendages: **0**. Simple; **1**. Articulated
6	Median prostomial antenna: **0**. Absent; **1**. Present
7	Eyes: **0**. Absent; **1**. Present
8	Peristomium: **0**. Distinct; **1**. Fused to the prostomium and limited
9	Mid-body segments: **0**. Simple; **1**. Biannulate; **2**. Triannulate
10	First segment: **0**. Parapodia absent; **1**. Neuropodia only, sometimes limited; **2**. Noto- and neuropodia present
11	Uniramous parapodia: **0**. Absent; **1**. Present
12	Biramous parapodia: **0**. Absent; **1**. Present
13	Parapodia: **0**. All biramous; **1**. First parapodium uniramous, following biramous; **2**. First two parapodia uniramous; **3**. First three parapodia uniramous; **4**. Numerous uniramous parapodia followed by biramous parapodia; **5**. All uniramous
14	Transition between uni- and biramous parapodia: **0**. Abrupt; **1**. Gradual
15	Noto- and neuropodium: **0**. Clearly separated; **1**. Partly fused
16	Notopodial prechaetal lobe: **0**. Absent; **1**. Reduced, only visible by chaetae; **2**. Short, rounded; **3**. Conical
17	Neuropodial prechaetal lobe: **0**. Short, rounded; **1**. Conical
18	Proportion between prechaetal lobes in mid-body: **0**. Both about equally short; **1**. Notopodial lobe distinctly longer; **2**. Neuropodial lobe distinctly longer; **3**. Both about equally long
19	Digitate distal process on neuropodial prechaetal lobes: **0**. Absent; **1**. Present
20	Bilobed noto-/neuropodia: **0**. Absent; **1**. Present
21	Noto- and neuropodium: **0**. One fused, rounded postchaetal lobe; **1**. Two distinctly separated postchaetal lobes
22	Postchaetal lobes in anterior parapodia: **0**. Same as following; **1**. Only one, medially inserted, triangular postchaetal lobe present
23	Notopodial postchaetal lobe: **0**. Absent; **1**. Reduced, only visible by chaetae; **2**. Short, rounded; **3**. Short, more or less triangular; **4**. Distinctly triangular
24	Neuropodial postchaetal lobe: **0**. Short, rounded; **1**. Long, rounded; **2**. Short, more or less triangular; **3**. Distinctly triangular
25	Proportion between postchaetal lobes in mid-body: **0**. Both about equally short; **1**. Notopodial lobe slightly longer; **2**. Notopodial lobe distinctly longer; **3**. Neuropodial lobe slightly longer; **4**. Neuropodial lobe distinctly longer; **5**. Both about equally long
26	Acicular lobe: **0**. Absent; **1**. Present
27	Cilia in the interramal region: **0**. Absent; **1**. Present
28	Dorsal cirri: **0**. On body wall; **1**. Dorsally on notopodia; **2**. Ventrally on notopodia
29	Dorsal cirri on body wall: **0**. Near parapodial base; **1**. Above parapodial base; **2**. Far above parapodial base
30	Dorsal cirri: **0**. From 1st parapodium; **1**. From 2nd parapodium; **2**. From 3rd parapodium
31	Ventral cirri: **0**. All conical to oval; **1**. In anterior parapodia conical to oval, in posterior parapodia slender triangular to digitiform; **2**. All more or less slender triangular to digitiform
32	Branchiae on parapodia: **0**. Absent; **1**. Present
33	Types of branchiae: **0**. Blister-like; **1**. Simple digitiform; **2**. With up to 6 branchial rami; **3**. Bush-like branched
34	Position of branchiae: **0**. Dorsal; **1**. Medial on anterior side; **2**. Interramal
35	Position of dorsal branchiae: **0**. Dorsal on parapodial base; **1**. Medio-dorsal; **2**. Termino-dorsal; **3**. Dorsal on posterior side of parapodial base
36	Retractile branchiae: **0**. Absent; **1**. Present
37	Spinigerous compound chaetae: **0**. Absent; **1**. Present
38	Falcigerous compound chaetae: **0**. Absent; **1**. Present
39	Spinigerous and falcigerous chaetae: **0**. Anterior falcigerous, posterior spinigerous; **1**. Anterior falcigerous and spinigerous, posterior spinigerous; **2**. Anterior falcigerous, posterior falcigerous and spinigerous; **3**. Both in all parapodia
40	Simple chaetae: **0**. Absent; **1**. Present
41	Simple chaetae: **0**. Capillary; **1**. Aciculary
42	Distribution of chaetae: **0**. Noto- and neuropodia with simple chaetae; **1**. Notopodia (if present) with simple chaetae, neuropodia with compound chaetae
43	Number of anal cirri: **0**. One; **1**. Two; **2**. Three
44	Jaws: **0**. Absent; **1**. Present
45	Type of jaws: **0**. 1 pair of paragnaths; **1**. 4 jaws with venom glands; **2**. Ring of macro- and micrognaths
46	Outer rami of ailerons: **0**. Absent; **1**. Present
47	Inner rami of ailerons: **0**. Absent; **1**. Present
48	Interramal plate of ailerons: **0**. Absent; **1**. Present
49	Types of ailerons with interramal plate: **0**. Slightly arched base; **1**. Rounded triangular base; **2**. Triangular base; **3**. Pointed triangular base
50	Chevrons: **0**. Absent; **1**. Present
51	Terminal long papillae on proboscis: **0**. Absent; **1**. Present
52	Proboscidial papillae on proboscis: **0**. Absent; **1**. Present
53	Proboscidial papillae: **0**. Soft, partly keratinized; **1**. Sclerotized
54	Oval to globular papillae: **0**. Absent; **1**. Present
55	Ridges on oval to globular papillae: **0**. Absent; **1**. Present
56	Conical papillae: **0**. Absent; **1**. Present
57	Ridges on conical papillae: **0**. Absent; **1**. One longitudinal ridge; **2**. Y-shaped ridge and 2-3 subterminal longitudinal ridges; **3**. 2 U-shaped ridges; **4**. 3 U-shaped ridges; **5**. Numerous U-shaped ridges; **6**. Numerous terminally V-shaped and basally more U-shaped ridges
58	Digitiform papillae: **0**. Absent; **1**. Present
59	Ridges on digitiform papillae: **0**. Absent; **1**. One longitudinal ridge; **2**. One terminal U-shaped ridge and a longitudinal ridge; **3**. Undulating ridge; **4**. Numerous U-shaped ridges; **5**. Numerous terminally V-shaped and basally more U-shaped ridges
60	Papillae with a terminal fingernail structure: **0**. Absent; **1**. Present
61	Stalk of fingernail papillae: **0**. Short; **1**. Medium-length; **2**. Long
62	Ridges on nail: **0**. Absent; **1**. Terminal V-shaped ridges; **2**. Longitudinal ridges
63	Types of sclerotized papillae: **0**. Uniform; **1**. Some different kinds

Tab. 2: Matrix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
LACYDONIIDAE	2	0	-	0	0	1	0/1	0	2	0	1	1	3	0	0	2	0	0	0	0	1
NEPHTYIDAE	3	0	-	1	0	0	0/1	1	0	2	0	1	0	-	0	2	0	0	0	1	1
PARALACYDONIIDAE	1	0	-	0	1	0	0	0	1	1	1	1	1	0	0	3	1	2	0	1	1
GLYCERIDAE																					
Glycera africana	0	1	3	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera alba	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera americana	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera bassensis	0	1	3	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera benhami	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera branchiopoda	0	1	1	0	0	0	0	1	2	1	1	1	2	0	1	3	1	1	0	0	0
Glycera brevicirris	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera capitata	0	1	1	0	0	0	0	1	2	1	1	1	2	0	1	3	1	2	0	0	0
Glycera celtica	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera cinnamomea	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera dibranchiata	0	1	2	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera fallax	0	1	2	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera gilbertae	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	2	0	0	1
Glycera guatemalensis	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	1	0	0	1
Glycera knoxi	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera lamelliformis	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera lapidum	0	1	1	0	0	0	0	1	2	1	1	1	2	0	1	3	1	2	0	0	0
Glycera macintoshi	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera macrobranchia	0	1	2	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera madagascariensis	0	1	2	0	0	0	0	1	2	1	1	1	2	0	1	3	1	2	0	0	1
Glycera natalensis	0	1	2	0	0	0	0	1	2	1	1	1	2	0	1	3	1	3	0	0	1
Glycera nicobarica	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera onomichiensis	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera ovigera	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera oxycephala	0	1	3	0	0	0	0	1	2	1	1	1	2	0	1	3	1	3	0	0	0
Glycera pacifica	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera posterobranchia	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera prosobranchia	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera pseudorobusta	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera robusta	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera russa	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera sagittariae	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera sphyrabrancha	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	0
Glycera tridactyla	0	1	2	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera tesselata	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycera unicornis	0	1	1	0	0	0	0	1	1	1	1	1	2	0	1	3	1	3	0	0	1
Glycerella magellanica	1	1	0	0	0	0	0	1	2	1	1	1	2	0	1	3	1	1	0	0	1
Hemipodia armata	0	1	?	0	0	0	0	1	2	1	1	0	5	-	-	0	1	-	1	0	-
Hemipodia californiensis	0	1	1	0	0	0	0	1	2	1	1	0	5	-	-	0	1	-	0	0	-
Hemipodia pustatula	0	1	2	0	0	0	0	1	2	1	1	0	5	-	-	0	1	-	1	0	-
Hemipodia simplex	0	1	1	0	0	0	0	1	2	1	1	0	5	-	-	0	1	-	0	0	-
Hemipodia yenourensis	0	1	1	0	0	0	0	1	2	1	1	0	5	-	-	0	1	-	0	0	-
GONIADIDAE																					
Bathyglycinde	0	0	-	0	?	0	0	1	0	1	1	1	4	0	0	3	1	2	0	1	1
Bookhoutia	0	1	1	0	?	0	0	1	0	1	1	1	4	0	0	3	1	2	0	1	1
Glycinde	0	1	1	0	1	0	0/1	1	0	1	1	1	4	0/1	0	3	1	2	0	0/1	1
Goniada	0	1	1	0	1	0	0/1	1	0	1	1	1	4	0/1	0	3	1	2	0	0/1	1
Goniadella	0	1	1	0	1	0	0/1	1	1	1	1	1	4	0	0	1	1	2	0	0	1
Goniadides	0	1	1	0	1	0	0/1	1	1	1	1	1	4	0	0	1	1	2	0	0	1
Goniadopsis	0	1	1	0	?	0	0/1	1	?	1	1	1	4	1	0	3	1	2	0	0/1	1
Ophioglycera	0	1	1	0	1	0	0	1	0	1	1	1	4	1	0	3	1	2	0	1	1
Progoniada	0	1	1	0	1	0	0	1	0	1	1	0	5	-	-	0	1	-	0	0	-
Progoniadides	0	0	-	0	1	0	1	1	0	1	1	0	5	-	-	0	1	-	0	0	-

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
LACYDONIIDAE	0	2	0	0	0	0	1	-	0	2	0	-	-	-	-	1	0	-	1	0	1
NEPHTYIDAE	0	2	0/**1**	0/**4**	1	0/1	2	-	**0**/1	2	0/**1**	1	2	-	0	0	0	-	1	0	0
PARALACYDONIIDAE	0	2	0	0	0	1	1	-	1	2	0	-	-	-	-	1	0	-	1	0	1
GLYCERIDAE																					
Glycera africana	0	4	0	2	0	0	0	0	2	2	1	1	0	2	0	1	0	-	1	0	1
Glycera alba	0	4	0	2	0	0	0	1	2	2	1	1	0	2	0	1	0	-	1	0	1
Glycera americana	0	4	3	5	0	0	0	0	2	2	1	3	0	3	1	1	0	-	1	0	1
Glycera bassensis	0	3	3	3	0	0	0	0	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera benhami	0	2	0	0	0	0	0	1	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera branchiopoda	0	2	0	0	0	0	0	2	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera brevicirris	0	2	0	0	0	0	0	1	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera capitata	0	2	0	0	0	0	0	2	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera celtica	0	3	2	0	0	0	0	0	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera cinnamomea	0	4	3	5	0	0	0	0	2	2	1	2	0	0	0	1	0	-	1	0	1
Glycera dibranchiata	0	2	3	4	0	0	0	0	2	2	1	1	0	0	0	1	0	-	1	0	1
Glycera fallax	0	3	0	1	0	0	0	0	2	2	1	0	1	-	1	1	0	-	1	0	1
Glycera gilbertae	0	4	0	2	0	0	0	0	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera guatemalensis	0	2	0	3	0	0	0	0	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera knoxi	0	4	3	3	0	0	0	0	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera lamelliformis	0	4	3	5	0	0	0	0	2	2	1	0	0	0	0	1	0	-	1	0	1
Glycera lapidum	0	2	0	0	0	0	0	2	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera macintoshi	1	4	0	2	0	0	0	0	1	2	1	2	1	-	1	1	0	-	1	0	1
Glycera macrobranchia	1	4	0	2	0	0	0	0	2	2	1	1	0	2	0	1	0	-	1	0	1
Glycera madagascariensis	0	3	0	1	0	0	0	0	**1**/2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera natalensis	0	4	0	2	0	0	0	0	2	2	1	1	0	2	0	1	0	-	1	0	1
Glycera nicobarica	0	4	0	2	0	0	0	0	1	2	1	1	1	-	1	1	0	-	1	0	1
Glycera onomichiensis	0	4	3	5	0	0	0	0	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera ovigera	0	4	3	5	0	0	0	0	2	2	1	3	0	3	1	1	0	-	1	0	1
Glycera oxycephala	0	2	0	0	0	0	0	0	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera pacifica	0	4	3	5	0	0	0	0	2	2	1	3	0	3	1	1	0	-	1	0	1
Glycera posterobranchia	0	4	0	2	0	0	0	0	2	2	1	1	0	1	0	1	0	-	1	0	1
Glycera prosobranchia	0	4	0	2	0	0	0	0	2	2	1	1	0	2	0	1	0	-	1	0	1
Glycera pseudorobusta	0	3	2	1	0	0	0	0	2	2	1	0	0	0	0	1	0	-	1	0	1
Glycera robusta	0	3	2	1	0	0	0	0	2	2	1	0	0	0	0	1	0	-	1	0	1
Glycera russa	0	4	3	3	0	0	0	0	2	2	1	1	0	3	1	1	0	-	1	0	1
Glycera sagittariae	0	3	0	1	0	0	0	0	2	2	1	1	1	-	1	1	0	-	1	0	1
Glycera sphyrabrancha	0	2	0	0	0	0	0	0	2	2	1	1	0	2	0	1	0	-	1	0	1
Glycera tridactyla	0	4	0	2	0	0	0	0	2	2	1	1	0	2	0	1	0	-	1	0	1
Glycera tesselata	0	2	0	0	0	0	0	1	2	2	0	-	-	-	-	1	0	-	1	0	1
Glycera unicornis	0	4	3	5	0	0	0	0	1	2	1	2	1	-	1	1	0	-	1	0	1
Glycerella magellanica	0	3	0	1	0	0	0	1	1	1	0	-	-	-	-	1	1	3	1	0	1
Hemipodia armata	-	0	0	-	0	0	0	0	2	?0	0	-	-	-	-	1	0	-	0	-	1
Hemipodia californiensis	-	0	0	-	0	0	0	0	2	0	0	-	-	-	-	1	0	-	0	-	1
Hemipodia pustatula	-	0	0	-	0	0	0	0	2	1	0	-	-	-	-	1	0	-	0	-	1
Hemipodia simplex	-	0	0	-	0	0	0	0	2	1	0	-	-	-	-	1	0	-	0	-	1
Hemipodia yenourensis	-	0	0	-	0	0	0	0	2	1	0	-	-	-	-	1	0	-	0	-	1
GONIADIDAE																					
Bathyglycinde	0	2	3	4	0	0	0	0	0	2	0	-	-	-	-	1	0	-	1	0	1
Bookhoutia	0	2	0	0	0	0	0	0	0	2	0	-	-	-	-	1	1	2	1	1	1
Glycinde	0	2	3	4	0	0	0	0	0	2	0	-	-	-	-	1	0	-	1	1	1
Goniada	0	2	3	4	0	0	0	0	0	2	0	-	-	-	-	1	0/**1**	1	1	0/1	1
Goniadella	0	1	0	0	0	0	0	0	1	2	0	-	-	-	-	1	1	3	1	1	1
Goniadides	0	1	0	0	0	0	0	0	0/**1**	2	0	-	-	-	-	0/**1**	1	3	1	1	1
Goniadopsis	0	2	3	4	0	0	0	0	0	2	0	-	-	-	-	1	1	0	1	1	1
Ophioglycera	0	2	3	4	0	0	0	0	1	2	0	-	-	-	-	1	0	-	1	0/1	1
Progoniada	-	0	0	-	0	0	0	0	1	2	0	-	-	-	-	1	0/**1**	3	0	-	1
Progoniadides	-	0	0	-	0	0	0	0	0	2	0	-	-	-	-	0	1	-	0	-	1

	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
LACYDONIIDAE	2	0	-	0	0	0	-	0	0	0	-	0	-	0	-	0	-	0	-	-	-
NEPHTYIDAE	0	1	0	0	0	0	-	0	1	0/1	0	0	-	1	0	1	0	0	-	-	-
PARALACYDONIIDAE	2	0	-	0	0	0	-	0	0	0	-	0	-	0	-	0	-	0	-	-	-
GLYCERIDAE																					
Glycera africana	1	1	1	1	1	1	3	0	0	1	0	1	0	1	1	0	-	1	1	2	-
Glycera alba	1	1	1	1	1	1	3	0	0	1	0	1	0	0	-	1	1	1	2	2	-
Glycera americana	1	1	1	1	1	1	2	0	0	1	0	1	0	1	3	0	-	0	-	-	-
Glycera bassensis	1	1	1	1	1	1	3	0	0	1	0	0	-	1	6	1	5	0	-	-	-
Glycera benhami	1	1	1	1	1	0	-	0	0	1	0	0	-	1	1	1	2	0	-	-	-
Glycera branchiopoda	1	1	1	1	1	1	3	0	0	1	0	1	0	0	-	1	1	0	-	-	-
Glycera brevicirris	1	1	1	1	1	0	-	0	0	1	0	0	-	1	1	1	5	0	-	-	-
Glycera capitata	1	1	1	1	1	1	3	0	0	1	0	1	0	0	-	1	1	0	-	-	-
Glycera celtica	1	1	1	1	1	1	1	0	0	1	0	1	1	1	6	0	-	0	-	-	-
Glycera cinnamomea	1	1	1	1	1	1	3	0	0	1	0	1	0	0	-	1	1	1	2	2	-
Glycera dibranchiata	1	1	1	1	1	1	1	0	0	1	0	1	1	1	6	0	-	0	-	-	-
Glycera fallax	1	1	1	1	1	1	2	0	0	1	0	1	0	1	4	0	-	0	-	-	-
Glycera gilbertae	1	1	1	1	1	1	2	0	0	1	0	1	1	1	5	0	-	1	0	1	-
Glycera guatemalensis	1	1	1	1	1	0	-	0	0	1	0	1	0	1	1	0	-	0	-	-	-
Glycera knoxi	1	1	1	1	1	1	2	0	0	1	0	1	0	1	5	0	-	0	-	-	-
Glycera lamelliformis	1	1	1	1	1	1	2	0	0	1	0	1	0	1	1	0	-	1	0	0	-
Glycera lapidum	1	1	1	1	1	1	3	0	0	1	0	1	0	0	-	1	3	0	-	-	-
Glycera macintoshi	1	1	1	1	1	1	1	0	0	1	0	1	0	1	4	0	-	0	-	-	-
Glycera macrobranchia	1	1	1	1	1	1	2	0	0	1	0	1	0	1	1	0	-	1	0	2	-
Glycera madagascariensis	1	1	1	1	1	1	2	0	0	1	0	1	0	1	4	0	-	0	-	-	-
Glycera natalensis	1	1	1	1	1	1	2	0	0	1	0	1	0	0	-	1	1	1	2	2	-
Glycera nicobarica	1	1	1	1	1	1	2	0	0	1	0	1	0	1	4	0	-	0	-	-	-
Glycera onomichiensis	1	1	1	1	1	1	3	0	0	1	0	1	0	0	-	1	1	1	2	2	-
Glycera ovigera	1	1	1	1	1	1	2	0	0	1	0	1	0	1	2	0	-	0	-	-	-
Glycera oxycephala	1	1	1	1	1	1	0	0	0	1	0	1	1	1	6	0	-	0	-	-	-
Glycera pacifica	1	1	1	1	1	1	2	0	0	1	0	1	0	1	4	0	-	0	-	-	-
Glycera posterobranchia	1	1	1	1	1	1	3	0	0	1	0	1	0	1	1	0	-	1	1	2	-
Glycera prosobranchia	1	1	1	1	1	1	2	0	0	1	0	1	0	1	1	0	-	1	0	2	-
Glycera pseudorobusta	1	1	1	1	1	1	1	0	0	1	0	1	1	1	6	0	-	0	-	-	-
Glycera robusta	1	1	1	1	1	1	2	0	0	1	0	1	1	1	5	0	-	0	-	-	-
Glycera russa	1	1	1	1	1	1	2	0	0	1	0	1	1	1	6	0	-	0	-	-	-
Glycera sagittariae	1	1	1	1	1	1	2	0	0	1	0	1	0	1	4	0	-	0	-	-	-
Glycera sphyrabrancha	1	1	1	1	1	0	-	0	0	1	0	1	0	0	-	1	0	0	-	-	-
Glycera tridactyla	1	1	1	1	1	1	2	0	0	1	0	1	0	1	1	0	-	1	0	2	-
Glycera tesselata	1	1	1	1	1	0	-	0	0	1	0	0	-	1	1	1	1	0	-	-	-
Glycera unicornis	1	1	1	1	1	1	2	0	0	1	0	1	0	1	4	0	-	0	-	-	-
Glycerella magellanica	1	1	1	1	0	0	-	0	0	1	0	0	-	0	-	1	1	0	-	-	-
Hemipodia armata	1	1	1	1	0	0	-	0	0	1	0	0	-	1	5	1	4	0	-	-	-
Hemipodia californiensis	1	1	1	1	0	0	-	0	0	1	0	1	1	0	-	1	4	0	-	-	-
Hemipodia pustatula	1	1	1	1	0	0	-	0	0	1	0	0	-	1	5	1	4	0	-	-	-
Hemipodia simplex	1	1	1	1	0	0	-	0	0	1	0	1	0	1	1	0	-	0	-	-	-
Hemipodia yenourensis	1	1	1	1	0	0	-	0	0	1	0	1	1	1	5	0	-	0	-	-	-
GONIADIDAE																					
Bathyglycinde	1	1	2	0	0	0	-	0	0	1	1	0	-	0	-	0	-	0	-	-	1
Bookhoutia	1	1	2	0	0	0	-	0	0	1	1	0	-	0	-	0	-	0	-	-	0
Glycinde	1	1	2	0	0	0	-	0	0	1	1	0	-	0	-	0	-	0	-	-	1
Goniada	1	1	2	0	0	0	-	1	0	1	1	0	-	0	-	0	-	0	-	-	0
Goniadella	1	1	2	0	0	0	-	1	0	1	1	0	-	0	-	0	-	0	-	-	0
Goniadides	1	1	2	0	0	0	-	0	0	1	1	0	-	0	-	0	-	0	-	-	1
Goniadopsis	1	1	2	0	0	0	-	0	0	1	1	0	-	0	-	0	-	0	-	-	0
Ophioglycera	1	1	2	0	0	0	-	0	0	1	1	0	-	0	-	0	-	0	-	-	0
Progoniada	1	1	2	0	0	0	-	1	0	1	1	0	-	0	-	0	-	0	-	-	0
Progoniadides	1	?	?	0	0	0	-	0	0	1	1	0	-	0	-	0	-	0	-	-	0

Coding

The matrix was used in analyses with all characters unordered and given equal weighting. To avoid confusion within the matrix, unknown character states are scored with question marks (?) and non-applicable characters with hyphens (-), but for the analyses themselves the latter are also coded with question marks. In some of the examined taxa different states of one character are present (see Tab. 2; characters: 7, 14, 20, 24, 25, 27, 30, 32, 37, 38, 41, 52). The software programme Hennig86 cannot work with more than one option and for this reason, either the 'more typical' statements are used (characters: 24, 25, 30, 32, 37, 38, 52; recognisable by **bold type**) or some of the binary characters (7, 14, 20, 27, 41) are scored with a question mark, which considers both alternatives.

The single fused, rounded postchaetal lobe of some of the species of *Glycera* (character: 21) is interpreted as two short, rounded postchaetal lobes (characters: 23-24).

Analysis

The matrix was entered in TREE GARDENER 2.2.1. [© T.C. RAMOS] and analysed with heuristic search algorithms in Hennig86 1.5 [© J.S. FARRIS] and PAUP 3.1.1 and 4.0 [© D. SWOFFORD]. Searches were performed in Hennig86 using the heuristic search commands: mhennig*; bb*. This is the most extensive set of heuristic commands providing a good representative number of shortest trees (pers. com. K. FITZHUGH). The computer RAM memory was be able to save 2868 trees produced by the initial analysis. The strict consensus tree ('nelsen tree') is based on these 2868 trees. It was not possible to execute a complete analysis in PAUP using the heuristic search command and TBR, because computer memory was exhausted. As an 'alternative' a jackknife tree calculation was made by F. PLEIJEL with parsimony jackknifer (FARRIS et al. 1996), based on 10.000 replicates. This allows an estimate on how well 'supported' the branches are, but does not provide information on the tree length, although the well 'supported' branches would also appear in the shortest trees (FARRIS et al. 1996). A second run with branches collapsed below 50% support is not illustrated, since most of the glycerid taxa simply appear as a polytomy.

The shortest trees from the analysis with Hennig86 are 216 steps with a consistency index (CI) of 0.51 (without the uninformative characters (4, 6, 7, 10, 11, 26, 27, 39, 42, 51, 62): 0.48) and a retention index (RI) of 0.77.

Application of the cladistic analysis

The results of the cladistic analyses (figs. 142-143) support a sister group relationship between Glyceridae and Goniadidae, as suspected by FAUCHALD & ROUSE (1997). Both taxa are monophyletic, as well as the three genera *Glycera*, *Glycerella* (by definition; monotypic) and *Hemipodia* within the glycerids. The monophyly of the two families is clearly indicated by autapomorphies in the structure of the jaws (FAUCHALD & ROUSE 1997) and the proboscidial papillae. However, the jaws of the monotypic genus *Progoniadides* are uncertain, because they were not described (HARTMANN-SCHRÖDER 1974b) and the very small holotype could not be examined by SEM. The glycerids carry four jaws with ailerons and associated venom glands, arranged in a cross, and soft, partly keratinized proboscidial papillae, whereas the jaws of the goniadids consist of macro- and micrognaths, arranged in a circlet and the proboscidial papillae are always sclerotized. Additionally, the glycerids carry more or less distinct dorsal and ventral ciliated rings on the prostomium, in contrast to the goniadids where the cilia are concentrated in laterodorsal and lateroventral cavities. The monophyly of the three genera *Glycera*, *Glycerella* and *Hemipodia* is corroborated by clear differences. *Glycerella* have a prostomium consisting of four rings, one type of proboscidial papillae, and additionally falcigerous compound chaetae. *Glycera* and *Hemipodia* are sister groups, based on the different types of proboscidial papillae and a prostomium with more than five rings. The notopodia and their capillary chaetae have been lost in the species of *Hemipodia*, whereas more complicated ailerons, with outer and inner ramus and sometimes an interramal plate, are developed in the species of *Glycera*.

The major difference between the PAUP (fig. 143) and the Hennig86 analysis (fig. 142) is the greater resolution of relationships and the shift of the clade *Glycerella* in the former, but the evidence for this jackknife tree is only weak, since only a few branches are well supported by a value of over 50%. Therefore, the strict consensus tree of the Hennig86 analysis seems to be more plausible, and the ancestor of the Glyceridae is estimated to have had jaws with rod-like ailerons, biramous parapodia with capillary notochaetae and spinigerous compound neurochaetae, and only one type of proboscidial papillae maybe similar to those in *Glycerella*. The relationships within the *Glycera* and *Hemipodia* clades have not been investigated more closely, because most of the taxa have no stable position if the matrix is tested with a slightly modified coding.

Another significant result of the analyses is that the genera of the Goniadidae appear in a great polytomy (fig. 142), showing without a doubt that further examinations are required and a revision of this taxon is advisable.

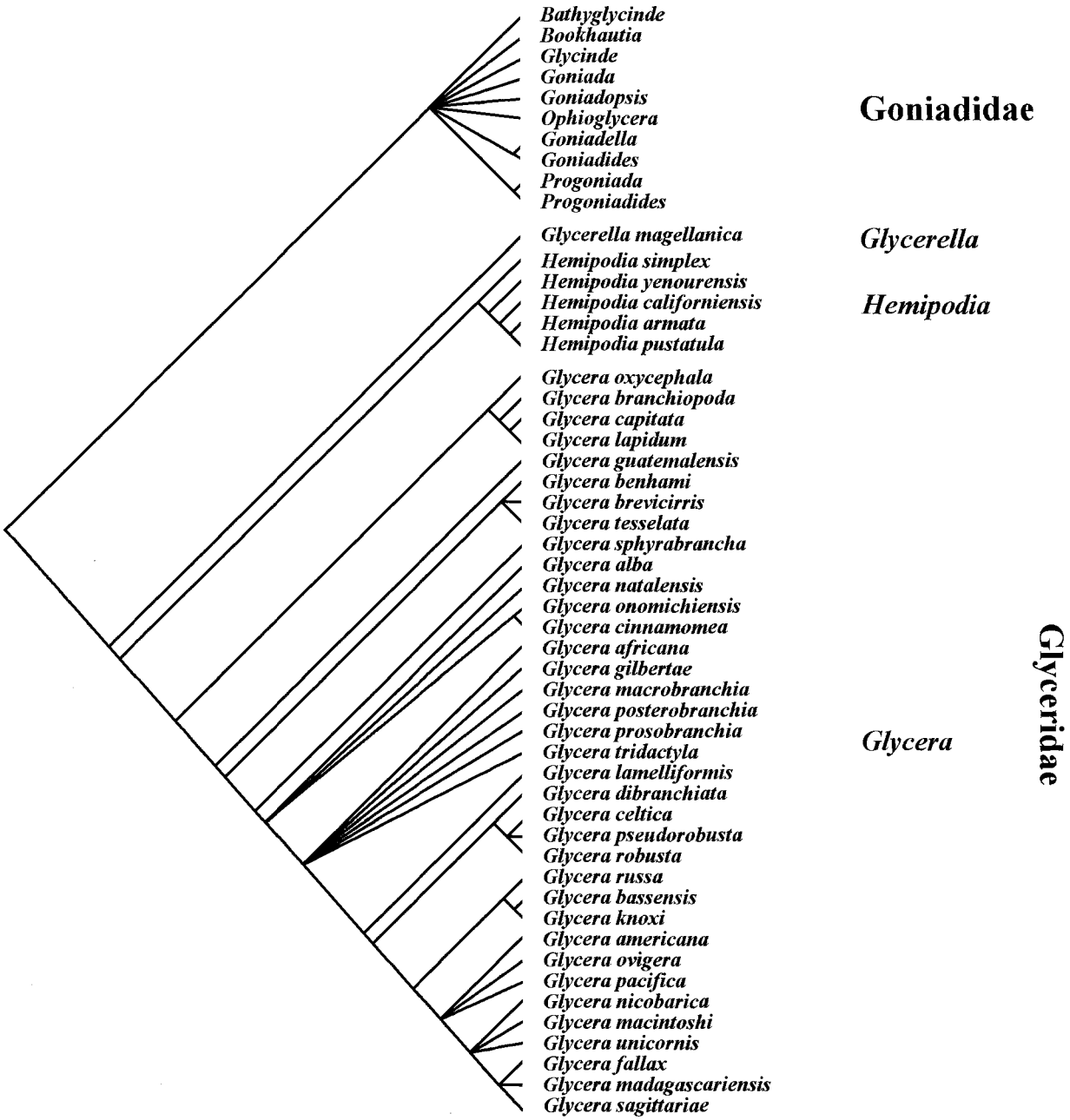

Fig. 142: Strict consensus tree from the heuristic analysis with Hennig86.

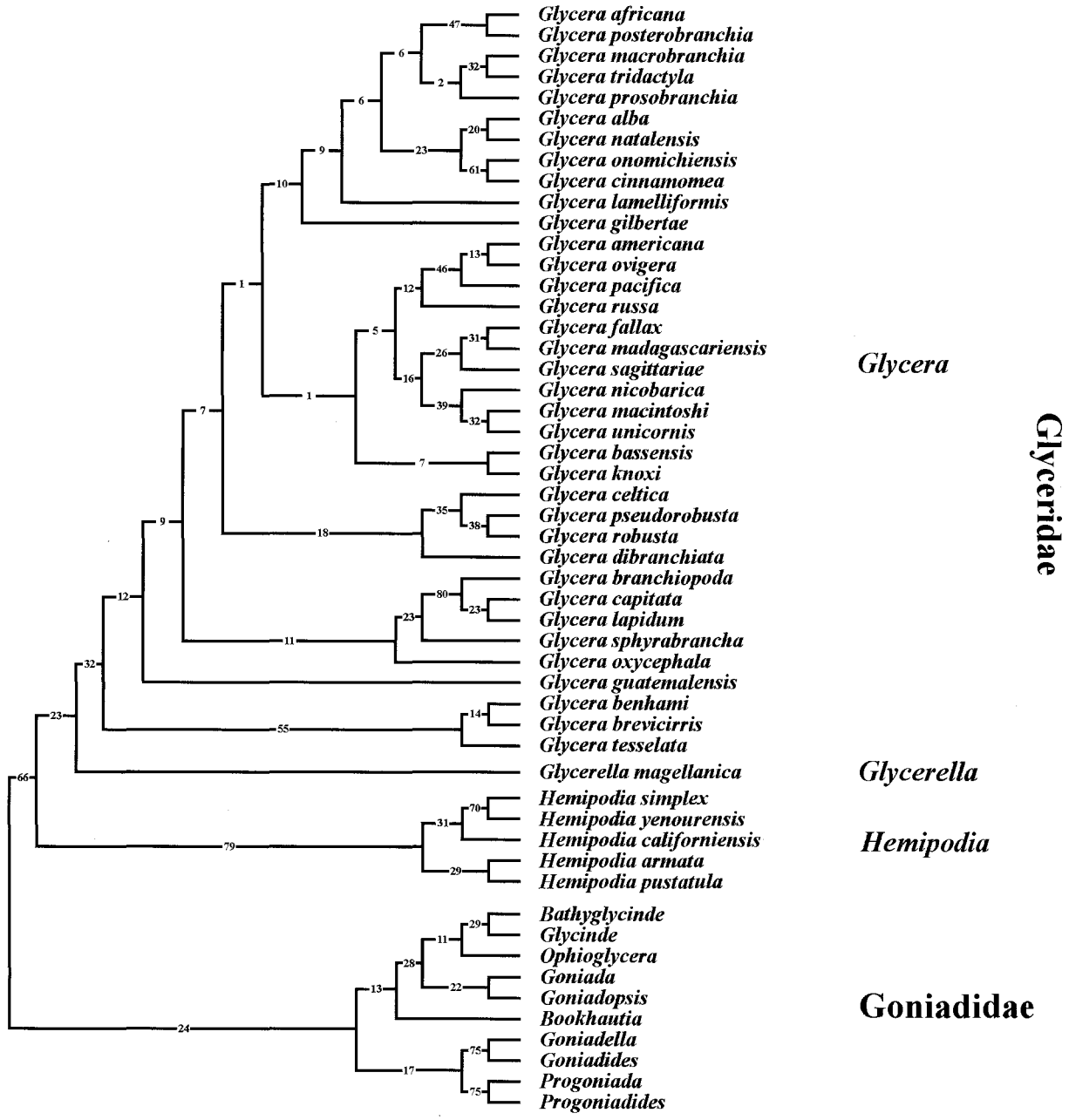

Fig. 143: 50% majority rule consensus tree from the parsimony jackknifer analysis with PAUP 4.0, where numerals represent frequencies of occurrences.

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Appendix

Additional registrations of Glyceridae from the literature

(This list considers specimens which are specified unambiguously (without question mark) or probably (with question mark) by the descriptions, drawings or examined material. Material not examined is symbolized in the distribution charts by black circles (●). A few of the *Glycera capitata* specimens, marked with an asterisk (*), are not represented on the chart since their localities are found outside the illustrated area. Some of the R/V VELERO III locality details are from FRASER 1943).

author	reported species	actual species	localities	examined material
Glycera				
AUGENER, H. (1918)	*G. africana*	***africana***	Ghana, Accra, 11 m, mud	HZM V-1115
	G. africana	***africana***?	Angola, Mussera, 13 m, bottom with stones	
	G. africana	***africana***?	Zaire, Boma, in the river Kongo, freshwater	
	G. africana	***africana***	Angola, Cabinda, Landana, 9 m, soft mud	HZM V-1120
	G. africana	***africana***?	Dahomey, Whydah, 11+15 m, mud	
	G. africana	***africana***	Gabun; Setté Cama, Nyanga River and Loango, 13 m, soft bottom	HZM V-1121
	G. africana	***africana***?	Ghana, Gold coast, Munford near Appam, 11 m	
	G. africana	***africana***?	Liberia, Cap Mount, Lagoon, blue mud	
	G. africana	***africana***	Liberia, Monrovia, Grand Bassa, 17 m, mud and sand	HZM V-1108
	G. africana	***africana***	Liberia, Sinoe, 15 m	
	G. tridactyla	***africana***?	Namibia, Lüderitz-Bay, 0-10 m (cs, 109 mm, 197 Seg.)	
	G. tridactyla	***africana***?	Namibia, Walfisch-Bay, 8 m (with epitokous female)	
DAY, J.H. (1957)	*G. alba*	***africana***?	Moçambique, Inhaca Island	
	G. alba	***africana***	Moçambique, Morrumbene estuary	SAM A20467
DAY, J.H. (1967)	*G. alba*	***africana***	Moçambique, 26°S 32°E and 23°S 35°E, 0-99 m [see DAY 1957]	
	G. convoluta	***africana***	SW Africa, 22°S 14°E and 26°S 15°E, 0-99 m (120 mm, 150 Seg.)	
FAUVEL, P. (1901)	*G. africana*	***africana***?	Senegal, Casamance (55 mm)	
FAUVEL, P. (1919)	*G. africana*	***africana***	Madagascar, Récif de Tuléar, No. 5046	MNHN A119
ARWIDSSON, I. (1899)	*G. alba*	***alba***?	Norway, Hvidingsö, beyond Stavanger (af, 28 mm, 58 Seg.; epitokous female in Bergen Museum as *G. setosa*)	
EHLERS, E. (1868)	*G. alba*	***alba***?	Norway, Bergen (af, 70 mm, 99 Seg.)	
GRUBE, E. (1870a)	*G. alba*	***alba***	Norway and Denmark	ZMB Q. 4301 [partim]
IZUKA, A. (1912)	*G. alba*	***alba***?	Japan, Sagami Bay, Suruga Bay and "North Japan" (USS ALBATROSS), 31-75 fms	
	G. alba	***alba***?	Japan, Gulf of Aomori in Prov. Mutsu (75 mm, 100 Seg.)	
LEE, J.H. (1984)	*G. alba*	***alba***?	Yellow Sea St. 105, 710, 1003, 1009, 1304, VIII.1982, 40-80 m, sand or clayey sand (15-20 mm, 70 Seg.)	
MALMGREN, A.J. (1867)	*G. alba*	***alba***	Scandinavia, Norway, Dröbak	SSM 973
	G. alba	***alba***?	Scandinavia, Sweden, Dyngö	
	G. alba	***alba***?	Scandinavia, Sweden, Koster	
	G. alba	***alba***?	Scandinavia, Norway, Stavanger	
	G. alba	***alba***?	Scandinavia, Sweden, Väderöarne	
MOORE, J.P. (1903)	*G. alba*	***alba***	USS ALBATROSS St. 3707, Suruga Bay, 1900, 63-75 fms	USNM 5353
	G. alba	***alba***	USS ALBATROSS St. 3740, Suruga Bay, 1900, 65 fms	USNM 5354
O'CONNOR, B.D.S. (1987)	*G. alba*	***alba***?	Norwegian W coast, Swedish W coast, North Sea, W coast of Scotland, N + S and W coast of Ireland, W coast of France, Mediterranean Sea, 10-300 m, muddy sand	

author	reported species	actual species	localities	examined material
STØP-BOWITZ, C. (1941)	*G. alba*	***alba***?	Norway, several stations	
VOIT, M. (1911)	*G. alba*	***alba***?	R/V POSEIDON St. 7, 54°44'N 6°4'E, III.1903, 38 m (34 mm, 120 Seg.)	
	G. alba	***alba***?	R/V POSEIDON St. 25, 54°34'N 4°41'E, III.1903, 51 m	
	G. alba	***alba***?	R/V POSEIDON St. 34, 57°25'N 7°57'E, VII.1904, 103 m	
	G. alba	***alba***?	R/V POSEIDON St. 40, 54°42'N 5°48'E, VII.1904, 41 m	
	G. alba	***alba***?	R/V POSEIDON St. 41, 57°46'N 11°10'E, III.1903, 40 m	
	G. alba	***alba***?	R/V POSEIDON St. 44, 55°25'N 4°44'E, VII.1904, 45 m	
	G. alba	***alba***?	R/V POSEIDON St. 49, 55°14'N 6°22'E, III.1903, 49 m	
	G. alba	***alba***?	R/V POSEIDON St. 74, 53°43'N 5°E, VII.1903, 36 m	
	G. alba	***alba***?	R/V POSEIDON St. K 3, 56°15'N 11°30'E, V.1910, 24 m	
	G. alba	***alba***?	R/V POSEIDON St. K 8, 57°35'N 11°10'E, V.1910, 42 m	
	G. alba	***alba***?	R/V POSEIDON St. N 4, 56°41'N 2°15'E, XI.1902, 87 m	
	G. alba	***alba***?	R/V POSEIDON St. N 6, 57°54'N 4°48'E, V.1903, 100 m	
	G. alba	***alba***?	R/V POSEIDON St. N 6, 57°54'N 4°48'E, XI.1902, 100 m	
DAY, J.H. (1973b)	*G. americana*	***americana***?	U.S.A., North Carolina, Beaufort, intertidal-120 m	
DÖRJES, J. (1972)	*G. americana*	***americana***	U.S.A., Georgia, Sapelo Island	SMF several nr.
DÖRJES, J. & HOWARD, J.D. (1975)	*G. americana*	***americana***	U.S.A., Georgia, Ogeechee River	SMF several nr.
EHLERS, E. (1868)	*G. americana*	***americana***	U.S.A., South Carolina, Charleston; New Jersey, Sommerset Point (210 mm, 220 Seg.)	
EHLERS, E. (1901)	*G. americana*	***americana***	Chile, Calbuco, XII.1894, in the sand of the beach	ZMB 3659
GARDINER, S.L. (1975)	*G. americana*	***americana***?	U.S.A., North Carolina, marsh near Beaufort Inlet, Cape Lookout, and Banks Channel, sand mixed with mud, gravel and shells (120 mm)	
	G. americana	***americana***?	U.S.A., North Carolina, Radio Island	
GILBERT, K.M. (1984a)	*G. americana*	***americana***?	Gulf of Mexico CTGLF 03, 28°40'02"N 90°14'43"W, V.1978, 30 m, silty clayey sand	
	G. americana	***americana***?	Gulf of Mexico IXTOC S52-4, 26°10'00"N 97°01'00"W, XI.1979, 27 m, silty sand to clayey sand	
	G. americana	***americana***?	Gulf of Mexico MAFLA 2207E, 27°57'00.4"N 83°09'00.3"W, II.1978, 19 m, fine-very fine sand	
	G. americana	***americana***?	Gulf of Mexico MAFLA 2210I, 27°57'28.8"N 83°42'29.2"W, VII.1976, 37 m, silty, very fine sand	
	G. americana	***americana***?	Gulf of Mexico MAFLA 2316D, 28°42'00.3"N 84°20'00.7"W, VIII.1976, 35 m, silty fine sand	
	G. americana	***americana***?	Gulf of Mexico MAFLA 2316K, 28°42'00.3"N 84°20'00.7"W, VIII.1976, 35 m, silty fine sand	
	G. americana	***americana***?	Gulf of Mexico MAFLA 2419C, 29°46'59.8"N 84°05'00.2"W, VIII.1977, 10 m, medium fine sand	
	G. americana	***americana***?	Gulf of Mexico MAFLA 2423I, 29°37'00.8"N 84°17'00.2"W, VII.1976, 19 m, silty fine sand	
	G. americana	***americana***?	Gulf of Mexico MAFLA 2640I, 29°43'29.3"N 87°54'30.3"W, VI.1975, 35 m, medium sand	
	G. americana	***americana***?	Gulf of Mexico STOCS 4/I-1, 28°14'N 96°29'W, S/1976, 10 m, clayey sand	
	G. americana	***americana***?	Gulf of Mexico STOCS 4/I-2, 28°14'N 96°29'W, S/1976, 10 m, clayey sand	
	G. americana	***americana***?	Gulf of Mexico STOCS 4/I-4, 28°14'N 96°29'W, F/1976, 10 m, clayey sand	
	G. americana	***americana***?	Gulf of Mexico STOCS 4/I-5, 28°14'N 96°29'W, F/1976, 10 m, clayey sand	
	G. americana	***americana***?	Gulf of Mexico STOCS 4/IV-6, 26°10'N 97°08'W, W/1976, 15 m, sand	
	G. americana	***americana***?	Gulf of Mexico STOCS 5/IV-4, 26°10'N 96°54'W, Sp/1976, 37 m, silty clayey sand	
	G. sp. E	***americana***	Gulf of Mexico STOCS 5/IV-4, 26°10'N 96°54'W, Sp/1976, 37 m, silty clayey sand	USNM 89791
HARTMAN, O. (1945)	*G. americana*	***americana***?	U.S.A., North Carolina, Beaufort	
HARTMAN, O. (1950)	*G. americana*	***americana***	U.S.A., Louisiana, Grand Isle	
	G. americana	***americana***	U.S.A., North Carolina	

author	reported species	actual species	localities	examined material
HARTMANN-SCHRÖDER, G. (1965)	*G. americana*	***americana***?	Chile St. 51, Punta Iloca, 34°56'S 72°14'W, 5.III.1960, 50 m, mud with fine sand (160 mm)	
	G. americana	***americana***?	Chile St. 65, Punta Talca, 36°31'S 73°13.2'W, 7.III.1960, 110 m	
	G. americana	***americana***?	Chile St. 66, Punta Talca, 36°32'S 73°06'W, 8.III.1960, 94 m, mud with detritus	
	G. americana	***americana***?	Chile St. 68, Punta Lavapie, 37°08.7'S 73°38.6'W, 10.III.1960, 58 m, fine sand with stones	
	G. americana	***americana***?	Chile, Bahia San Vicente, in front of the river mouth of the Lenga, 6 m, fine sand	
	G. americana	***americana***?	Chile, Montemar, 24.V.1957, 50 m, fine sand with mud	
NONATO, E.F. & LUNA, J.A.C. (1970)	*G. americana*	***americana***?	R/V AKAROA St. 2, NE Brazil, 21-50 m (af, 110 mm, 150 Seg.)	
	G. americana	***americana***?	R/V AKAROA St. 79, NE Brazil, 21-50 m, (af, 30 mm, 85 Seg.)	
PETTIBONE, M.H. (1963)	*G. americana*	***americana***	U.S.A., Florida, Seahorse Key, off Tampa (350 mm, 300 Seg.)	USNM 30027
	G. americana	***americana***	U.S.A., Long Island Sound	
	G. americana	***americana***?	U.S.A., Maryland, Chesapeake Bay	
	G. americana	***americana***?	U.S.A., Massachusetts, Woods Hole region, Nantucket Sound, Elizabeth Islands, 0-45 fms (with epitokous males in July and August)	
	G. americana	***americana***	U.S.A., North Carolina, Beaufort	USNM 29230
	G. americana	***americana***?	U.S.A., Rhode Island	
	G. americana	***americana***?	U.S.A., South Carolina, Parris Island	
	G. americana	***americana***	U.S.A., Virginia, Chincoteague Bay	USNM 29234
RULLIER, F. & AMOUREUX, L. (1979)	*G. unicornis*	***americana***	R/V CALYPSO St. 154, 32°15'S 51°58'W, 20.XII.1961, 18 m, mud (100 mm)	MNHN A886
VERRILL, A.E. (1873)	*R. Americanus*	***americana***?	U.S.A., South Carolina, Charleston, to Long Island and Vineyard Sound, 0-10 fms	
WESENBERG-LUND, E. (1962)	*G. americana*	***americana***?	Chile St. M 20, Gulf of Ancud, Estero Huito, 41°43.50'S 73°10.15'W, 15.XII.1948, 15 m, fine sand with mud (170 mm, 260 Seg.)	
	G. longissima	***americana***?	Chile St. M 22, Gulf of Ancud, Isla Quenu, Punta Pinto, 41°49.15'S 73°10.15'W, 16.XII.1948, tidal belt, boulders and stones in sand (50 mm, 100 Seg.)	
	G. longissima	***americana***?	Chile St. M 107, Gulf of Ancud, N of Punta Barranco at Isla Abtao, 41°47.18'S 73°20.55'W, 5-6.V.1949, 60 m, coarse sand with mud and some dead algae	
BENHAM, W.B. (1916)	*G. tesselata*	***benhami***	FIS ENDEAVOUR, Australia, Bass Strait, E coast of Flinders Island (50 mm, 100 Seg.)	
	G. tesselata	***benhami***	FIS ENDEAVOUR, Australia, E of Maria Island, Tasmania, 78 fms	AM E6308
BLAKE, J.A. (1985)	*G. profundi*	***branchiopoda***	DSRV ALVIN St. 1169, SW of North Hill, 27°03'N 111°23'W, 11.I.1982, 2010 m	USNM 81857
	G. profundi	***branchiopoda***?	DSRV ALVIN St. 1174, East Hill, 27°01.5'N 111°24'W, 17.I.1982, 1960-2010 m	
	G. profundi	***branchiopoda***?	DSRV ALVIN St. 1175, 27°02.5'N 111°23'W, 18.I.1982, 2010 m	
FAUCHALD, K. (1972)	*G. branchiopoda*	***branchiopoda***?	R/V VELERO IV St. 7234-61, 15.5 miles from Natividad Isl. light, 27°38'00" 115°16'16" - 27°37'48"N 115°16'05"W, 2.I.1961, 433-461 fms, mud and glauconitic sand	
	G. profundi	***branchiopoda***?	R/V VELERO IV St. 11805, 23 miles 88.5°T from Isla Tortuga, 27°26'12"N 111°26'00"W, 27.XI.1967, 997 fms	
	G. profundi	***branchiopoda***?	R/V VELERO IV St. 11809, 16 miles 73°T from E end Isla Tortuga, 27°31'30"N 111°34'30"W, 27.XI.1967, 970 fms	
	G. profundi	***branchiopoda***?	R/V VELERO IV St. 11810, 12.7 miles 73°T from Isla Tortuga, 27°30'30"N 111°38'20"W, 27.XI.1967, 970 fms	
	G. profundi	***branchiopoda***?	R/V VELERO IV St. 11815, 11 miles 118°T from Isla Tortuga, 27°28'30"N 111°43'30"W - 27°18'00"N 111°35'30"W, 28.XI.1967, 880-900 fms	

author	reported species	actual species	localities	examined material
FAUCHALD, K. (1972)	*G. profundi*	***branchiopoda***?	R/V VELERO IV St. 11826, 12.3 miles 285°T from S end Isla Angel de la Guarda, 29°03'15"N 113°21'56"W, 1.XII.1967, 565 fms	
	G. profundi	***branchiopoda***?	R/V VELERO IV St. 11829, 7 miles 245°T from S end Isla Angel de la Guarda, 28°56'45"N 113°15'30"W, 1.XII.1967, 595 fms	
	G. profundi	***branchiopoda***?	R/V VELERO IV St. 13756, 35 miles 204°T from Cabo Corrientes light, 19°51'00"N 105°57'30"W, 18.I.1970, 1400 fms	
HARTMAN, O. (1950)	*G. capitata*	***branchiopoda***?	R/V VELERO III St. 887-38, California, NE of Middle Farallon Island, 37°48'N 122°59'W, 7.VIII.1938, 37 fms, sand	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 915-39, Mexico, Clarion Island, Sulphur Bay, 18°20'45"N 114°44'15"W, 16.III.1939, 5 fms, coral sand	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 992-39, California, off Santa Rosa Island, 33°56'00"N 119°42'00"W - 33°56'30"N 119°40'30"W, 10.VIII.1939, 130-230 fms, gravel and mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 994-39, California, off Santa Cruz Island, 33°58'30"N 119°54'45"W - 33°58'30"N 119°55'15"W, 10.VIII.1939, 114-127 fms, gray mud and broken shells	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1026-39, California, N of San Clemente Island, 32°59'30"N 118°38'25"W, 9.XII.1939, 118-120 fms, sponges and mud (epitokous)	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1036-40, Mexico, Gulf of California, Arroyo de San Luis, 23°10'45"N 109°25'45"W, 20.I.1940, surface, Electric Light at Anchorage (epitokous)	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1130-40, California, off Laguna Beach, 33°32'15"N 117°48'10"W - 33°32'50"N 117°49'00"W, 21.IV.1940, 25-28 fms, sandy mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1131-40, California, off Laguna Beach, 33°30'40"N 117°47'10"W - 33°30'20"N 117°47'30"W, 21.IV.1940, 54-57 fms, mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1137-40, California, off Redondo Beach, 33°49'50"N 118°26'10"W - 33°49'55"N 118°25'45"W, 5.V.1940, 96-120 fms, gray mud and shells	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1142-40, California, off Point Vincente Light House, 33°44'10"N 118°24'20"W - 33°43'45"N 118°24'15"W, 6.V.1940, 17-41 fms, coarse sand with mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1152-40, California, SE of Santa Catalina Island, 33°15'55"N 118°13'50"W - 33°15'25"N 118°13'00"W, 5.VII.1940, 132-148 fms, rocky	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1168-40, California, 3.5 miles of Newport Beach, 33°34'15"N 117°58'35"W - 33°34'20"N 117°59'00"W, 9.VIII.1940, 34-37 fms, gray-green mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1191-40, California, S side of Santa Cruz Island, 33°57'40"N 119°37'40"W - 33°57'50"N 119°38'20"W, 30.X.1940, 37-40 fms, gray sand with shells	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1192-40, California, Santa Cruz Island, off Bowen Point, 33°56'00"N 119°43'15"W - 33°56'25"N 119°43'25"W, 30.X.1940, 58-90 fms, sand with broken shells	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1202-40, California, off Point Fermin, 33°41'45"N 118°17'50"W - 33°41'45"N 118°18'00"W, 17.XI.1940, 16-18 fms, gray mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1214-40, California, San Pedro Channel, 70 fathom Bank, 33°24'45"N 118°00'50"W - 33°25'25"N 118°01'12"W, 30.XI.1940, 150-200 fms, sandy black mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1220-40, California, San Nicholas Island, 1.5 miles off Dutch Harbor, 33°11'50"N 119°29'10"W - 33°11'30"N 119°29'15"W, 12.XII.1940, 63-83 fms, gray sand with mud and dead shell	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1223-41, California, San Pedro Channel, 33°27'15"N 118°02'35"W - 33°27'00"N 118°03'25"W, 25.I.1941, 225-235 fms, green sand (epitokous)	

author	reported species	actual species	localities	examined material
HARTMAN, O. (1950)	*G. capitata*	***branchiopoda***?	R/V VELERO III St. 1229-41, California, 10 miles S of San Pedro Breakwater, 33°33'35"N 118°09'10"W - 33°33'20"N 118°10'10"W, 26.I.1941, 81-83 fms, gray-green sand	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1274-41, California, 3.5 miles S of Hueneme, 34°05'30"N 119°12'40"W - 34°05'30"N 119°12'40"W, 23.III.1941, 29-30 fms, shells and mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1275-41, California, 1.5 miles SE of Point Mugu, 34° 04'00"N 119°02'45"W - 34°03'45"N 119°02'30"W, 23.III.1941, 26-30 fms, mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1288-41, California, Santa Cruz Island, 5 miles S of Fraser Point, 33°58'20"N 119°55'00"W - 33°57'40"N 119°54'55"W, 11.IV.1941, 74-103 fms, green mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1289-41, California, Santa Rosa Island, 2.6 miles E of E Point, 33°56'05"N 119°54'50"W - 33°55'50"N 119°55'00"W, 11.IV.1941, 47-49 fms, green mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1300-41, California, Santa Cruz Island, 1.5 miles NW of Cavern Point, 34°04'35"N 119°34'15"W - 34°04'40"N 119°34'30"W, 12.IV.1941, 54-56 fms, mud with sand and dead shells	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1311-41, California, Santa Catalina Island, SE of W end, 33°27'20"N 118°35'35"W - 33°27'20"N 118°35'35"W, 3.V.1941, 40-50 fms, sand and mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1321-41, California, Santa Catalina Island, 2 miles W of Church Rock, 33°17'40"N 118°21'55"W - 33°17'25"N 118°21'50"W, 18.V.1941, 45-53 fms, mud and sand	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1387-41, California, Santa Rosa Island, 4.5 miles SE of E Point, 33°54'05"N 119°54'30"W - 33°53'56"N 119°53'45"W, 25.VIII.1941, 52 fms, green sandy mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1388-41, California, Santa Rosa Island, 3.6 miles off E Point, 33°54'05"N 119°54'25"W - 33°54'25"N 119°54'30"W, 25.VIII.1941, 52-55 fms, green mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1396-41, California, San Miguel Island, 2.5 miles SE of Bennett Point, 33°59'10"N 120°25'10"W - 33°59'25"N 120°25'12"W, 27.VIII.1941, 57-62 fms	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1402-41, California, Santa Catalina Island, 8 miles E of Long Point, 33°24'25"N 118°14'00"W - 33°24'55"N 118°14'10"W, 13.IX.1941, 240-267 fms, small rocks (epitokous)	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1411-41, California, off San Miguel Island, 34°00'10"N 120°25'20"W - 34°00'30"N 120°26'20"W, 16.IX.1941, 44-48 fms, sand with shells	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1412-41, California, San Miguel Island, S of Crook Point, 33°58'40"N 120°21'25"W - 33°58'40"N 120°22'00"W, 16.IX.1941, 41-43 fms, sand and mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1413-41, California, San Miguel Island, 2 miles SW of Cardwell Point, 33°59'55"N 120°19'15"W - 34°00'00"N 120°19'10"W, 16.IX.1941, 34-35 fms, mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1422-41, California, Santa Catalina Island, 7.25 miles E of Long Point, 33°24'55"N 118°13'25"W - 33°25'25"N 118°13'30"W, 28.IX.1941, 228-250 fms, green mud (epitokous)	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1435-41, California, Santa Cruz Island, 1.5 miles SW of Gull Island, 33°56'00"N 119°50'55"W - 33°56'00"N 119°50'55"W, 8.XI.1941, 48 fms, mud	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1436-41, California, Santa Cruz Island, 2.75 miles N of W Point, 34°07'00"N 119°56'05"W - 34°07'00"N 119°56'05"W, 9.XI.1941, 55 fms, mud with shells	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1471-42, Oregon, S of Winchester Bay, off 10-mile Creek, 43°37'40"N 124°15'53"W - 43°34'30"N 124°14'58"W, 1.VII.1942, 20-40 fms, sand	

author	reported species	actual species	localities	examined material
HARTMAN, O. (1950)	*G. capitata*	***branchiopoda***?	R/V VELERO III St. 1479-42, Oregon, N of Depoe Bay, Boiler Bay, 44°48'55"N 124°04'00"W, 14.VII.1942, shore, flat rocks	
	G. capitata	***branchiopoda***?	R/V VELERO III St. 1489-42, Oregon, Coos Bay, Cape Arago State Park, N Bay, 43°19'00"N 124°24'15"W, 28.VII.1942, shore, loose rocks with shale reef and kelp	
	G. capitata	***branchiopoda***?	USS ALBATROSS St. D5830, San Francisco Bay	
HARTMAN, O. & BARNARD, J.L. (1958)	*G. capitata branchiopoda*	***branchiopoda***?	R/V VELERO IV St. 2169-52, Santa Catalina Island, 13 miles WSW of East End, 33°11'28"N 118°31'32"W, 30.X.1952, 1251 m, fine mud	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 2636-54, San Pedro Basin, 754 m	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 2729-54, Santa Monica Basin, 9.5 miles of Point Vicente Lighthouse, 33°45'49"N 118°35'50"W, 8.V.1954, 814 m, fine gray mud	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 2846-54, Santa Catalina Island, 5.5 miles WSW of West End, 33°26'02"N 118°42'00"W, 23.VI.1954, 1120 m, gray-green mud	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 2850-54, Santa Catalina Island, 4.3 miles S of East End, 33°14'00"N 118°18'04"W, 23.VI.1954, 1135 m, green mud	
HARTMAN, O. & BARNARD, J.L. (1960)	*G. capitata branchiopoda*	***branchiopoda***?	R/V VELERO IV St. ?, S California, Santa Monica	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 2229, S California, San Pedro	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 2850, S California, Santa Catalina Island, 4.3 miles S of East End, 33°14'00"N 118°18'04"W, 23.VI.1954, 1135 m, green mud	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 5944, S California, East Cortes Basin, 26.8 miles from Cortes Bank buoy, 32°14'20"N 118°39'00"W, 10.XI.1958, 1688 m, green silt	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 6090, S California, San Diego trough, 11.7 miles from S Coronado Island S light, 32°19'00"N 117°26'55"W, 14.I.1959, 1300 m, green silt	
	G. capitata branchiopoda	***branchiopoda***?	R/V VELERO IV St. 6336, S California, San Nicolas, 15.5 miles from W end light, San Clemente Island, 33°09'00"N 118°52'10"W, 14.VIII.1959, 1227 m, green clay	
HILBIG, B. (1992)	*G. nana*	***branchiopoda***?	U.S.A., California: Santa Maria Basin, 123-1020 m, mixed sand and silt (25 mm, 107 Seg.; several stations also in 1994)	
HILBIG, B. (1994a)	*G. branchiopoda*	***branchiopoda***	U.S.A., California, Santa Maria Basin, off Purisima Point, St. 50, 34°37.80'N 121°01.66'W, 591 m, sand and sand mixed with silt (90 mm, 137 Seg.)	
	G. branchiopoda	***branchiopoda***	U.S.A., California, Santa Maria Basin, off Purisima Point, St. 55, 34°33.66'N 120°56.31'W, 590 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-1, 34°55.79'N 120°49.91'W, 145 m (25 mm, 107 Seg.)	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-2, 34°55.32'N 120°49.59'W, 142 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-3, 34°56.26'N 120°49.58'W, 138 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-4, 34°56.26'N 120°50.24'W, 150 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-5, 34°55.32'N 120°50.24'W, 152 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-6, 34°54.71'N 120°49.91'W, 148 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-7, 34°55.79'N 120°48.60'W, 123 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-8, 34°56.87'N 120°49.91'W, 142 m	
	G. nana	***branchiopoda***?	U.S.A., California, Santa Maria Basin, off Point Sal, St. PJ-10, 34°53.63'N 120°49.91'W, 147 m	
	G. nana	***branchiopoda***?	U.S.A., California, off the Farallon Islands, S of Pioneer Canyon	

author	reported species	actual species	localities	examined material
MOORE, J.P. (1911)	*G. branchiopoda*	***branchiopoda***?	USS ALBATROSS St. 4525, Monterey Bay, off Point Pinos Lighthouse, 222 fms, soft gray mud	
	G. branchiopoda	***branchiopoda***?	USS ALBATROSS St. 4527, Monterey Bay, off Point Pinos Lighthouse, 183-337 fms, hard sand	
	G. branchiopoda	***branchiopoda***	USS ALBATROSS St. 4528, Monterey Bay, off Point Pinos Lighthouse, 766-800 fms, soft gray mud	USNM 16846
	G. capitata	***branchiopoda***	USS ALBATROSS St. 4343, vicinity of San Diego, off South Coronado Island, 60-155 fms, fine gray sand (40-46 mm, 98-109 Seg.)	USNM 17034
	G. capitata	***branchiopoda***?	USS ALBATROSS St. 4452, Monterey Bay, off Point Pinos Lighthouse, 49-50 fms, green mud and fine sand	
	G. capitata	***branchiopoda***?	USS ALBATROSS St. 4457, Monterey Bay, off Point Pinos Lighthouse, 40-46 fms, dark green mud	
	G. capitata	***branchiopoda***	USS ALBATROSS St. 4464, Monterey Bay, off Point Pinos Lighthouse, 36-51 fms, soft dark gray mud	USNM 17304
	G. capitata	***branchiopoda***?	USS ALBATROSS St. 4485, Monterey Bay, off Santa Cruz Lighthouse, 39-108 fms, soft green mud and sand	
	G. capitata	***branchiopoda***?	USS ALBATROSS St. 4548, Monterey Bay, off Point Pinos Lighthouse, 46-57 fms, coarse sand, shells and rock	
	G. capitata	***branchiopoda***	USS ALBATROSS St. 4549, Monterey Bay, off Point Pinos Lighthouse, 46-57 fms, coarse sand, shells and rock	USNM 16932
	G. capitata	***branchiopoda***?	USS ALBATROSS St. 4550, Monterey Bay, off Point Pinos Lighthouse, 46-57 fms, green mud and rock	
	G. capitata	***branchiopoda***?	USS ALBATROSS St. 4551, Monterey Bay, off Point Pinos Lighthouse, 46-57 fms, coarse sand, shells and rock	
	G. capitata	***branchiopoda***?	USS ALBATROSS St. 4557, Monterey Bay, off Point Pinos Lighthouse, 53-54 fms, rock	
AUGENER, H. (1906)	*G. oxycephala*	***brevicirris***	Barbados nr. 276, 94 fms	HZM PE-611
	G. oxycephala	***brevicirris***	Dominica nr. 175, 611 fms	MCZ 2294
AUGENER, H. (1927b)	*G. tessellata*	***brevicirris***?	Curacao, 1920	
	G. tessellata	***brevicirris***?	Curacao, Spaansche Haven: 17.IV.1920, 6. + 20.V.1920, 16.IV.1920, sand; 17.IV.1920, reef	
	G. tessellata	***brevicirris***?	Curacao-Bay: 10.V.1920, from sponges; 25.V.1920	
DAY, J.H. (1962)	*G. lancadivae*	***brevicirris***?	Madagascar, Diego Suarez, soft mud	
	G. lancadivae	***brevicirris***?	Madagascar, Nossi-Bé, sand	
DAY, J.H. (1965)	*G. tesselata*	***brevicirris***?	Red Sea St. E62/2632/B, Melita Bay, Gulf of Zula, 12-14.IV.1962, muddy mangrove swamp	?SAM A20476
	G. tesselata	***brevicirris***?	Red Sea St. E62/3420/B, Abiad Bay, Entedebir Is., 29.III.1962, intertidal, coral sand	?SAM A20476
	G. tesselata	***brevicirris***?	Red Sea St. E62/3452, /3547/a/B, /3557/B, /3610/B, Abiad Bay, Entedebir Is., 25-29.III.1962, intertidal, coral sand	?SAM A20476
DAY, J.H. (1967)	*G. lancadivae*	***brevicirris***?	Madagascar, intertidal (90 mm)	
	G. tesselata	***brevicirris***?	Madagascar, intertidal (35 mm, 100 Seg.)	
DAY, J.H. (1973b)	*G. tesselata*	***brevicirris***	U.S.A., North Carolina, Beaufort, 6.5-120 m (35 mm)	USNM 51113
FAUCHALD, K. (1973)	*G. abranchiata*	***brevicirris***	Panama, Naos Island, 8°53'N 79°33'W, 31.VII.1969	
FAUCHALD, K. (1977b)	*G. oxycephala*	***brevicirris***	Panama, Galeta Reef	USNM 66010, 66011, 66013
	G. tesselata	***brevicirris***?	Panama, Galeta Reef	
FAUVEL, P. (1930)	*G. Lancadivae*	***brevicirris***	New Caledonia, Ile des Pins, 1928	MNHN A120
FAUVEL, P. (1957)	*G. tesselata*	***brevicirris***	Gulf of Akaba St. E 49/4, XII.1949	HUJ [partim]
GARDINER, S.L. (1975)	*G. tesselata*	***brevicirris***	U.S.A., North Carolina, Banks Channel, sand, mud or mixed with shell (64 mm)	USNM 52965
	G. tesselata	***brevicirris***	U.S.A., North Carolina, off Beaufort, 10 m	USNM 51113
	G. tesselata	***brevicirris***?	U.S.A., North Carolina, off Beaufort, 34°36'N 76°28'W, 10 m	

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GIBBS, P.E. (1971)	*G. lancadivae*	***brevicirris***?	A/K MARORO, Solomon Islands, New Georgia Group, Vangunu Island, Marovo Lagoon St. 203, 3.XI.1965, 4 m, coarse sand	
	G. lancadivae	***brevicirris***?	A/K MARORO, Solomon Islands, New Georgia Group, Vangunu Island, Marovo Lagoon St. 229, 10.XI.1965, 5 m, sand	
	G. lancadivae	***brevicirris***?	A/K MARORO, Solomon Islands, New Georgia Group, Vangunu Island, Marovo Lagoon St. 98, 28.X.1965, 11 m, sand	
	G. lancadivae	***brevicirris***?	Solomon Islands, Florida Islands, Tetel Island, 5-10.7. and 24-29.VII.1965, littoral, fine coral mud to coarse sand and shell gravel	
	G. lancadivae	***brevicirris***	Solomon Islands, Guadalcanal, Fintry Point, 17.IX.-10.X.1965, littoral, fine coral mud to coarse sand and shell gravel	BMNH 1970.419 [partim]
	G. lancadivae	***brevicirris***?	Solomon Islands, Guadalcanal, Graham Point, 17.IX.-10.X.1965, littoral, fine coral mud to coarse sand and shell gravel	
	G. lancadivae	***brevicirris***?	Solomon Islands, Guadalcanal, Komimbo Bay, 18-20.VII. and 16-21.VIII.1965, littoral, fine coral mud to coarse sand and shell gravel	
	G. lancadivae	***brevicirris***	Solomon Islands, Guadalcanal, Maraunibina Island, 17.IX.-10.X.1965, littoral, fine coral mud to coarse sand and shell gravel	BMNH 1970.436
	G. lancadivae	***brevicirris***?	Solomon Islands, Guadalcanal, Naro Bay, 18-20.VII. and 16-21.VIII.1965, littoral, fine coral mud to coarse sand and shell gravel	
	G. lancadivae	***brevicirris***	Solomon Islands, New Georgia Group, Matiu Island, 3-7.VII. and 27-31.VIII.1965, littoral, fine coral mud to coarse sand and shell gravel	BMNH 1970.434
	G. lancadivae	***brevicirris***?	Solomon Islands, Russel Islands, Yandina, 18.X.1965, littoral, fine coral mud to coarse sand and shell gravel	
GIBBS, P.E. (1972)	*G. lancadivae*	***brevicirris***	Cook Islands, Aitutaki, 18°51'45"S 159°48'10"W, 26-27.VIII.1969 and Rarotonga, 21°12'06"S 159°46'33"W, 21-27 VIII.1969, 0-6 m, fine coral mud to coarse sand and shell gravel	
GILBERT, K.M. (1984a)	*G. abranchiata*	***brevicirris***	Gulf of Mexico MAFLA 2211C, 27°56'29.5"N 83°52'59.5"W, VII.1976, 43 m, coarse sand (72 mm, 131 Seg.)	USNM 89752
	G. abranchiata	***brevicirris***?	Gulf of Mexico MAFLA 2211D, 27°56'29.5"N 83°52'59.5"W, VII.1976, 43 m, coarse sand	
	G. abranchiata	***brevicirris***?	Gulf of Mexico MAFLA 2422I, 29°30'N 84°27'W, VII.1976, 24 m, medium fine sand	
	G. abranchiata	***brevicirris***?	Gulf of Mexico MAFLA 2423, 29°37'00.8"N 84°17'00.2"W, VII.1976, 19 m, silty fine sand	
	G. abranchiata	***brevicirris***	Gulf of Mexico SOFLA 16C, 25°45.70'N 83°11.07'W, VIII.1981, 54 m, fine sand	USNM 89754
	G. abranchiata	***brevicirris***	Gulf of Mexico SOFLA 22D, 25°17.18'N 83°02.07'W, XI.1980, 53 m, fine sand	USNM 89753
	G. abranchiata	***brevicirris***	Gulf of Mexico STOCS HR1-2, 27°32'05"N 96°28'19"W, III.1976, 75 m	USNM 89748
	G. abranchiata	***brevicirris***	Gulf of Mexico STOCS HR3-6, 27°32'05"N 96°27'35"W, IV.1976, 81 m	USNM 89749
	G. abranchiata	***brevicirris***	Gulf of Mexico STOCS HR4-1, 27°33'02"N 96°29'03"W, Sp/1976, 76 m, silty clay	USNM 89750
	G. abranchiata	***brevicirris***	Gulf of Mexico STOCS SB1-3, 27°26'49"N 96°31'18"W, III.1976, 81 m	USNM 89747
	G. abranchiata	***brevicirris***	Gulf of Mexico STOCS SB3-4, 27°26'06"N 96°31'47"W, IV.1976, 82 m	USNM 89751
	G. abranchiata	***brevicirris***	U.S.A., North Carolina, Banks Channel, IV.1972, intertidal, muddy sand with shell	USNM 52965
	G. abranchiata	***brevicirris***?	U.S.A., North Carolina, Beaufort, 10 m	
	G. papillosa	***brevicirris***	Gulf of Mexico MAFLA 2104B, 26°25'00.0"N 83°23'00.8"W, V.1975, 53 m, coarse sand	USNM 89742

author	reported species	actual species	localities	examined material
GILBERT, K.M. (1984a)	*G.* sp. F	***brevicirris***?	Gulf of Mexico MAFLA 2419C, 29°46'59.8"N 84°05'00.2"W, IX.1975, 10 m, medium fine sand (af, 40 mm, 68 Seg.)	
	G. sp. F	***brevicirris***?	Gulf of Mexico MAFLA 2531F, 29°47'58.9"N 86°09'28.9"W, VI.1975, 45 m, coarse sand	
	G. sp. F	***brevicirris***?	Gulf of Mexico SOFLA 31C, 26°45.61'N 84°14.81'W, VIII.1981, 141 m, fine sand	
	G. sp. F	***brevicirris***?	Gulf of Mexico STOCS 3/IV-1, 26°10'N 96°24'W, Sp/1976, 91 m, clayey sand	
	G. sp. F	***brevicirris***?	Gulf of Mexico STOCS 7/IV-1, 26°10'N 96°20'W, S/1976, 130 m, silty clay	
	G. sp. F	***brevicirris***?	Gulf of Mexico STOCS SB1-2, 27°26'49"N 96°31'18"W, III.1976, 81 m	
	G. sp. F	***brevicirris***?	Gulf of Mexico STOCS SB3-1, 27°26'06"N 96°31'47"W, VIII.1976, 82 m	
HARTMANN-SCHRÖDER, G. (1979)	*G. lancadivae*	***brevicirris***	Australien, Broome, near Bali Hai, 10.IX.1975, mud flat, lower eulittoral, fine sand (36 mm, 137 Seg.)	
HARTMANN-SCHRÖDER, G. (1982)	*G. tesselata*	***brevicirris***?	R/V METEOR 36 1975 St. 100, NW Africa, 21°27.10'N 18°16.10'W, 26.II.1975, 2100 m (af, 128 mm)	
HOAGLAND, R.A. (1920)	*G. nana*	***brevicirris***	USS ALBATROSS Philippine Islands, San Miguel Harbor, Ticao Island (epitokous)	USNM 19001
	G. nana	***brevicirris***	USS ALBATROSS St. D5149, Philippine Islands, Sirun Island, 10 fms, coral and shell	USNM 19002
	G. nana	***brevicirris***?	USS ALBATROSS St. D5209, Taratara Island, 11°45'25"N 124°48'05"E, 20 fms, green mud	
IBARZÁBAL, D. (1986)	*G. abranchiata*	***brevicirris***?	Cuba, Isla de la Juventud, Punta del Este	
IZUKA, A. (1912)	*G. tesselata*	***brevicirris***?	Japan, Tsuro in Prov. Tosa (65 mm, 98 Seg.)	
	G. tesselata	***brevicirris***?	Japan, Yodomi in Sagami Bay, 40 fms	
	G. tesselata	***brevicirris***?	USS ALBATROSS, Japan, Sagami Bay, 153 fms	
JONES, M.L. (1962)	*G. abranchiata*	***brevicirris***	Jamaica, Ocho Rios, 11.VIII.1957 (af, 31 mm, 109 Seg.)	
KOHN, A.J. & LLOYD, M.C. (1973)	*G. tesselata*	***brevicirris***	R/V TE VEGA St. 108, Indonesia, SW of Sumatra, Sanding Island, Pulo Stupai, 3°26'S 100°40'E, 5.XII.1963, reef limestone substrate (14 mm)	USNM 45304
MICHAELSEN, W. (1892)	*G. Lancadivae*	***brevicirris***	Sri Lanka No. 38, coral reef (105 mm, 180 Seg.)	HZM V-1091
REISH, D.J. (1968)	*G. tesselata*	***brevicirris***	Marshall Islands, Eniwetok: Rigili, Bogombogo, Engebi, Lidilbut, Bikini	USNM 29889
RENAUD, J.C. (1956)	*G. tesselata*	***brevicirris***?	Bimini, Tokas Cay, muddy flats (70-80 mm)	
RIOJA, E. (1960)	*G. oxycephala*	***brevicirris***?	Mexico, Isla de Enmedio (80-100 mm)	
SILVA, P.H.D.H. DE (1965)	*G. lancadivae*	***brevicirris***?	Sri Lanka, E Province, Kalkuda	
TREADWELL, A.L. (1901)	*G. tesselata*	***brevicirris***	R/V FISH HAWK Puerto Rico Exp. 1898-99 St. 6055	USNM 16061
	G. tesselata	***brevicirris***	R/V FISH HAWK Puerto Rico Exp. 1898-99 St. 6066	USNM 16060
	G. tesselata	***brevicirris***	R/V FISH HAWK Puerto Rico Exp. 1898-99, Ensenada Honda (Culebra)	USNM 15999
	G. tesselata	***brevicirris***	R/V FISH HAWK Puerto Rico Exp. 1898-99, Puerto Real	USNM 16059
APPY, T.D. et al. (1980)	*G. capitata*	***capitata***?	Canada, Bay of Fundy, St. 1, 8, 15, 44	
ARWIDSSON, I. (1899)	*G. capitata*	***capitata***?	W coast of Norway, Fischerbank Storeggen, ca. 63° N	
	G. capitata	***capitata***?	Russia, Murman coast	
	G. capitata	***capitata***?	Skarnsund, 50-100 m (90 mm)	
	G. capitata	***capitata***?	Norway, Trondhjemsfjord near Rødberg, 63°29'N, 14-18 m, algae ground with gravel and lime algae	
	G. kerguelensis	***capitata***?	Argentina, S Fireland, Ushuaia, 27.X.1892, low tide beach (35 mm; epitokous female)	
	G. setosa	***capitata***?	Greenland, Atanekerdluk in Waigatt, 20.VII.1883, 35-62 m, gray clay (epitokous)	
	G. setosa	***capitata***?	Greenland, Godhavn, 30.VI.1871, surface (epitokous)	
	G. setosa	***capitata***?	Finmarken, Karlsø, 13.VI.1864, 53 m (epitokous)	
	G. setosa	***capitata***	Finmarken, Karlsø, 1864, 53-70 m (epitokous)	SSM 971
	G. setosa	***capitata***?	Lofoten, surface (epitokous)	SSM 976

author	reported species	actual species	localities	examined material
AUGENER, H. (1928)	*G. capitata*	***capitata***?	R/V HELGOLAND, Spitzbergen St. 12, Smerenburg-Bay, 11°29 79°39', 30.VI.1898, 50 m, granite overcast with worm tubes (af, 45 mm) [dried]	ZMB 6151
	G. capitata	***capitata***	R/V HELGOLAND, Spitzbergen St. 21, Ice-Fjord, 15°0' 78°12', 16.VII.1898, 210-240 m, blue mud with a few small stones	ZMB 6151
	G. capitata	***capitata***	R/V HELGOLAND, Spitzbergen St. 45, Bismark Strait, 20°35' 78°58.5', 14.VIII.1898, 35 m, stones with Laminaria and red algae, no mud	ZMB 6151
	G. capitata	***capitata***	R/V HELGOLAND, Plankton St. 5, Norway, Trold-Fjord, whale station, 24°1' 70°1', 10.VI.1898, surface (epitokous)	ZMB 6151
	G. capitata	***capitata***?	Smerenburg or Danesgat, 30 m	
	G. capitata	***capitata***	Norway, Tromsø, littoral (cs, 112 mm, 145 Seg.)	SMF 1605, 2173
AVERINCEV, V.G. (1972)	*G. capitata abyssicola*	***capitata***?	R/V OB St. 252, Antarctic, 50°03'-08'S 19°57'E, 8.III.1957, 4810 m (40-50 mm) [syntype]	
	G. capitata antarctica	***capitata***?	Antarctic St. Г 70, 28.I.1966, 43 m, rock [paratype]	
	G. capitata antarctica	***capitata***?	R/V OB St. 12, Antarctic, 65°51'S 94°30'E, 2.III.1956, 919 m (110 mm) [paratype]	
	G. capitata antarctica	***capitata***?	R/V OB St. 15, Antarctic, 64°35'S 96°51'E, 3.III.1956, 206 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V OB St. 41, Antarctic, 65°42'S 124°28'E, 14.III.1956, 223 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V OB St. 44A, Antarctic, 65°50'S 128°27'E, 18.III.1956, 289 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V OB St. 121, Antarctic, 49°38'S 70°43'E, 20.V.1956, 141 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V OB St. 189, Antarctic, 69°18'-13'S 75°45'-44'E, 28.I.1957, 280 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 156, Antarctic, 59°59'S 32°12'W, 22.II.1965, 855 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 203, Antarctic, 54°49'S 55°39'W, 17.III.1965, 481 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 205, Antarctic, 54°05'S 58°49'W, 18.III.1965, 127 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 207, Antarctic, 53°03'S 59°30'W, 18.III.1965, 180 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 209, Antarctic, 52°05'S 61°40'W, 19.III.1965, 250 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 228, Antarctic, 45°05'S 60°17'W, 28.III.1965, 417 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 229, Antarctic, 43°36'S 59°45'W, 29.III.1965, 142 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 231, Antarctic, 41°08'S 57°14'W, 30.III.1965, 168 m [paratype]	
	G. capitata antarctica	***capitata***?	R/V AKADEMIK KNIPOVITSCH St. 232, Antarctic, 40°28'S 56°31'W, 30.III.1965, 190 m [paratype]	
BERKELEY, E. & BERKELEY, C. (1942)	*G. nana*	***capitata***	R/Y STRANGER, Alaska, Cleveland Passage, 1937	USNM 35960
BERKELEY, E. & BERKELEY, C. (1948)	*G. capitata*	***capitata***?	Canada, E coast Vancouver Island, 25 fms	
	G. capitata	***capitata***?	Canada, Princess Louise Inlet, 20 fms	
	G. capitata	***capitata***?	Canada, Queen Charlotte Islands, littoral	
	G. capitata	***capitata***?	Canada, W coast Vancouver Island, littoral-80 fms	
	G. nana	***capitata***?	Canada, E coast Vancouver Island, 10-25 fms	
	G. nana	***capitata***?	Canada, Princess Louise Inlet, 20 fms	
	G. nana	***capitata***?	Canada, Queen Charlotte Islands, littoral	
	G. nana	***capitata***?	Canada, W coast Vancouver Island, 8-36 fms	
BLAKE, J.A. & DEAN, D. (1973)	*G. capitata*	***capitata***	R/V HERO St. 28, Davis Strait, 66°28'-29'N 57°26-42"W, 17.VIII.1968, 580-610 m, soft mud	USNM 97549
	G. capitata	***capitata***	R/V HERO St. 29, W Greenland, off Little Hellefiske Bank, 64°57'N 58°38"W, 18.VIII.1968, 79-85 m, rocky bottom	USNM 50963

author	reported species	actual species	localities	examined material
DITLEVSEN, H. (1909)	*G. capitata*	***capitata***?	R/V FRAM 1898-1902, Arctic, Fosheim's Peak and valley on W side of the fjords, 3.VIII.1900, 4-40 m	
	G. capitata	***capitata***?	R/V FRAM 1898-1902, Arctic, Seewalzenspitze, 4.VIII.1900, 20-50 m, stones	
	G. capitata	***capitata***?	R/V FRAM 1898-1902, Arctic, winter harbour, Havnefjord, 22.VII.1900, 60 m	
DITLEVSEN, H. (1911)	*G. capitata*	***capitata***?	St. 96, 76 3/4°N 18°W off Maroussia, 22.VII.1908, 160-178 m	
DITLEVSEN, H. (1937)	*G. capitata*	***capitata***?	R/V GODTHAAB St. 29c, Greenland, Herrnhutpynten, Godthaab, 18.VI.1928, 10-20 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 48, 69°41'3N 55°30'W, 13.VII.1928, 120 m (epitokous)	
	G. capitata	***capitata***?	R/V GODTHAAB St. 61, 72°33'5N 57°36'W, 21.VII.1928, 190 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 65, 73°38'8'N 59°36'W, 28.VII.1928, 225 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 86, 76°36'N 68°54'W, 4.VIII.1928, 80-180 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 94, 77°28'5N 68°46'W, 6.VIII.1928, 875 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 107, 76°24'8N 69°38'W, 15.VIII.1928, 165 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 112, 76°37'4N 74°18'W, 16.VIII.1928, 580 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 114, 76°40'N 76°20'W, 16.VIII.1928, 85 m	
	G. capitata	***capitata***?	R/V GODTHAAB St. 116, 76°08'N 80°53'W, 17.VIII.1928, 80 m	
EHLERS, E. (1868)	*G. capitata*	***capitata***?	Norway, Bergen (67 mm, 170 Seg.)	?HZM K-594
	G. capitata	***capitata***?	Canada, Grand Manan, Eastport	
	G. capitata	***capitata***?	Greenland	
EHLERS, E. (1908)	*G. capitata*	***capitata***	R/V VALDIVIA 1898-99 St. 131, near Bouvet-Island, 54°28'S 3°30'E, 457 m, volcanic sand	ZMB 5535
EHLERS, E. (1913)	*G. capitata*	***capitata***	R/V GAUSS, 65°32'S 85°30'E, 24.II.1903, 2725 m	ZMB 5850
	G. capitata	***capitata***	R/V GAUSS, Kaiser Wilhelm-II-Land, winter station, 22.II.1902-10.II.1903, 385 m	ZMB 5850
FAUVEL, P. (1913 and 1914)	*G. capitata*	***capitata***?	St. 1070, W Spitzbergen, 79°18'30"N 10°31'15"E, 4.VIII.1899, 175 m, mud with sand and gravel	
	G. capitata	***capitata***?	St. 1074, Spitzbergen, Treurenberg Bay, 18.VIII.1899, 22 m	
	G. capitata	***capitata***?	St. 2386, Kastnaes, 6-7.VII.1906, 20 m	
	G. capitata	***capitata***	St. 2442, Spitzbergen, Wijde Bay, Mouillage de Lake Valley, 28.VII.1906, 20 m	MNHN A416
	G. capitata	***capitata***?	St. 2534, Karlsö, 2.IX.1906	
HARTMAN, O. (1948)	*G. capitata*	***capitata***?	Alaska King Crab Investigation St. 33-40, Pavlof Bay, N part, 25.IX.1940, 18 fm	
	G. capitata	***capitata***?	Alaska King Crab Investigation St. 34-40, Pavlof Bay, middle section, 25.IX.1940, 150 fm	
	G. capitata	***capitata***	Alaska King Crab Investigation St. 51-40, Canoe Bay, 2.X.1940, 25-40 fm	USNM 22538
	G. capitata	***capitata***	Alaska King Crab Investigation St. 61-40, Cold Bay, 10.X.1940, 15-30 fm	USNM 22534
	G. capitata	***capitata***?	Alaska King Crab Investigation St. CT 12-41, off Black Hill, 30.V.1941, 105 fm, gravel	
	G. capitata	***capitata***	Alaska King Crab Investigation St. D 3-41, Castle Bay, off Chignik Bay, 24.VI.1941, 21-52 fm	USNM 22541
	G. capitata	***capitata***	Alaska King Crab Investigation, Lazy Bay, off Alitak Bay, 12.XI.1940, low tide, sand and gravel	USNM 22536
	G. capitata	***capitata***?	Alaska King Crab Investigation, Seldovia, 18.III.1941	
HARTMAN, O. (1950)	*G. capitata*	***capitata***?	U.S.A., Alaska, Kodiak Island	
	G. capitata	***capitata***?	U.S.A., Alaska, Prince William Sound	
	G. capitata	***capitata***?	U.S.A., Alaska, Sitka and vicinity	
	G. capitata	***capitata***?	U.S.A., Washington, Port Orchard	

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HARTMAN, O. (1967)	*G. kerguelensis*	***capitata***	USNS ELTANIN St. 437, 62°50-51'S 60°40-35'W, 9.I.1963, 267-311 m	USNM 55941
	G. kerguelensis	***capitata***?	USNS ELTANIN St. 539, 60°25'S 47°23-22'W, 6.III.1963, 551-569 m	
	G. kerguelensis	***capitata***	USNS ELTANIN St. 997, 61°44-46'S 55°56-54'W, 14.III.1964, 769 m	USNM 55943
	G. kerguelensis	***capitata***?	USNS ELTANIN St. 1003, 62°41'S 54°43'W, 15.III.1964, 210-220 m	
	G. kerguelensis	***capitata***	USNS ELTANIN St. 1058, 59°50-52'S 32°27-23'W, 4.IV.1964, 650-659 m	USNM 55945
	G. kerguelensis	***capitata***	USNS ELTANIN St. 1079, 61°26-24'S 41°55'W, 13.IV.1964, 593-598 m	USNM 55953
	G. kerguelensis	***capitata***	USNS ELTANIN St. 1081, 60°35-34'S 40°44'W, 13.IV.1964, 631-641 m	USNM 55954
	G. kerguelensis	***capitata***	USNS ELTANIN St. 1082, 60°50-52'S 42°55-56'W, 14.IV.1964, 298-302 m	USNM 55955
	G. kerguelensis	***capitata***	USNS ELTANIN St. 1084, 60°22-23'S 46°50-52'W, 15.IV.1964, 298-403 m	USNM 55956
HARTMAN, O. (1978)	*G. kerguelensis*	***capitata***	USCGC GLACIER St. 11, Antarctic, Weddell Sea, 74°00'S 54°56'W, 12.II.1968, 384 m (55 mm, 65 Seg.)*	USNM 46631
	G. kerguelensis	***capitata***	USCGC GLACIER St. 21, Antarctic, Weddell Sea, 73°52'S 31°18'W, 13.III.1969, 2288 m*	USNM 46645
	G. kerguelensis	***capitata***	USCGC GLACIER St. 22, Antarctic, Weddell Sea, 73°28.4'S 30°26.9'W, 13.III.1969, 3111 m*	USNM 46646
HARTMANN-SCHRÖDER, G. & ROSENFELDT, P. (1990)	*G. kerguelensis*	***capitata***	R/V WALTHER HERWIG St. 171, 60°53.6'S 55°46.1'W, 27.II.1985, 260 m, muddy fine sand with stones	HZM P-20681
HARTMANN-SCHRÖDER, G. & ROSENFELDT, P. (1992)	*G. kerguelensis*	***capitata***	R/V POLARSTERN St. 144, 60°58.28'S 55°04.26'W, 10.VI.1986, 328 m, clay with small stones (52 mm, 106 Seg.)	HZM P-21819
KNOX, G.A. & CAMERON, D.B. (1998)	*G. capitata*	***capitata***?	Ross Sea, McMurdo Sound St. 61B, 77°51.596'S 166°43.14'E, 9.IV.1961-3.I.1962, 278-290 m (25-60 mm)*	
	G. capitata	***capitata***?	Ross Sea, Moubray Bay, Cape Hallett, Victoria Land Coast, 72°18'S 170°12'E, 104-250 m	
	G. capitata	***capitata***?	Ross Sea, NZOI St. A450, 76°42-36'S 179°44-53'E, 11.I.1959, 472-318 m, muddy sand*	
	G. capitata	***capitata***?	Ross Sea, NZOI St. A470, 77°50'S 166°30'E, 4.II.1969, 377 m, muddy sand*	
	G. capitata	***capitata***?	Ross Sea, NZOI St. A520, 74°20'S 179°30'E, Pennell Bank, 3.II.1960, 201-205 m, stones and sandy mud*	
	G. capitata	***capitata***?	Ross Sea, NZOI St. A522, 73°48-50'S 176°41-56'W, Pennell Bank, 4.II.1960, 1335 m, stones and muddy sand*	
	G. capitata	***capitata***?	Ross Sea, NZOI St. A530, 74°03.30-05.00'S 179°21-19'E, Pennell Bank, 9.II.1960, 271-267 m, muddy sand*	
	G. capitata	***capitata***?	USCGC GLACIER St. GLD-4, Ross Sea, 76°31.8'S 164°55'E, 27.XI.1958, 587 m*	
MALMGREN, A.J. (1867)	*G. capitata*	***capitata***?	Sweden, Bohus	
	G. capitata	***capitata***?	Finmarken, Hammerfest	
	G. capitata	***capitata***	Finmarken, Kalsö, Kalfjord and Grötsud, 30-70 fms	SSM 971
	G. capitata	***capitata***?	Finmarken, Ramfjord, 80 fms	
	G. capitata	***capitata***?	Greenland, Julianehaab, Godhavn, Godthaab, 100 fms	
	G. capitata	***capitata***?	Greenland, Pröven and Omenak, 250 fms	
	G. capitata	***capitata***?	Greenland, Sukkertoppen, 150 fms	
	G. capitata	***capitata***?	Iceland, Raufarhavn, 35 fms	
	G. capitata	***capitata***?	Spitzbergen, Bellsund, 35 fms	
	G. capitata	***capitata***?	Spitzbergen, Treurenberg-Bay, 25 fms	
	G. capitata	***capitata***?	Norway, Stavanger	
	G. capitata	***capitata***?	Norway, Tromsø	

author	reported species	actual species	localities	examined material
MONRO, C.C.A. (1930)	*G. capitata*	***capitata***	RRS DISCOVERY St. 45, South Georgia, 2.7 miles S 85°E of Jason Light, 6.IV.1926, 238-270 m, gray mud	BMNH 1930.10.8. 1351-52
	G. tesselata	***capitata***	RRS DISCOVERY St. 51, East Falkland Island, from 7 miles N 50°E to 7.6 miles N 63°E of Eddystone Rock, 4.V.1926, 105-115 m, fine sand	BMNH 1930.10.8. 1345-46
MONRO, C.C.A. (1939b)	*G. capitata*	***capitata***	BANZARE 1929-31 St. 41, off Enderby Land, 65°48'S 53°16'E, 193 m	BMNH 1941.3.3.1 260
MOORE, J.P. (1908)	*G. nana*	***capitata***?	USS ALBATROSS St. 4223, SE Alaska, Boca de Quadra, 1903, 48-57 fms, soft green mud	
	G. nana	***capitata***	USS ALBATROSS, SE Alaska, Port Ellis, 1903, beach	USNM 5608
	G. nana	***capitata***?	USS ALBATROSS, SE Alaska, Sumner Strait, near Shakan, 1903	
O'CONNOR, B.D.S. (1987)	*G. capitata*	***capitata***?	Greenland, Spitzbergen, Norway	
PETTIBONE, M.H. (1954)	*G. capitata*	***capitata***	U.S.A., Alaska, Unalaska, between Pinacle and Ulakhta, 1874, 16 fms (80 mm)	USNM 18633
	G. capitata	***capitata***?	U.S.A., Alaska, Unalaska, Captain's Harbor, 1874, 25-75 fms, coarse sand	
	G. capitata	***capitata***?	U.S.A., Alaska, Sitka, Eastern Harbor, 1874, 15 fms, gravelly-mud	
	G. capitata	***capitata***	U.S.A., Alaska, off Point Barrow base, 15 miles from shore, 78.2 fms, small rocks with worm tubes	?USNM 22546
	G. capitata	***capitata***?	E coast of N America: off Nova Scotia, Maine, Rhode Island, Massachusetts, 0-410 fms	
	G. capitata	***capitata***	NW Greenland, 1 mile NW Conical Rock, 1940	USNM 24082
	G. capitata	***capitata***?	NW Greenland, off Conical Rock, 1938, 20-40 fms	
	G. capitata	***capitata***?	NW Greenland, W side Wolstemholm Island, 1940	
	G. capitata	***capitata***?	U.S.A., Strait of Juan de Fuca, Washington and Puget Sounds, 0-165 fms	
	G. capitata	***capitata***	USS ALBATROSS St. 2876, 48°33'N 124°53'W, 59 fms	USNM 22545
	G. capitata	***capitata***?	USS ALBATROSS St. 2879, 48°53'N 125°53'W, 1888, 34 fms	
	G. capitata	***capitata***	USS ALBATROSS St. Herendeen Bay, 1890	USNM 18209
PETTIBONE, M.H. (1963)	*G. capitata*	***capitata***?	U.S.A., Gulf of St. Lawrence, S of Anticosti Island, 8-154 fms (150 mm, 150 Seg.)	
	G. capitata	***capitata***	U.S.A., Massachusetts Bay, 2 miles from Cape Cod Canal, 10 fms	USNM 33385
	G. capitata	***capitata***?	U.S.A., Massachusetts, 1 mile N Manomet Buoy, 17 fms	
	G. capitata	***capitata***?	U.S.A., Massachusetts, Georges Bank, leg. R. Wigley, 22-136 fms	
	G. capitata	***capitata***?	U.S.A., Massachusetts, off Provincetown, 38 fms	
QUATREFAGES, A. DE (1866)	*G. capitata*	***capitata***	Greenland, l'Islande (140-150 Seg.)	MNHN A118
	G. setosa	***capitata***	Greenland (90 mm, 120-130 Seg.)	MNHN A120
STØP-BOWITZ, C. (1941)	*G. capitata*	***capitata***?	Norway, several stations	
TREADWELL, A.L. (1937a)	*G. lapidum*	***capitata***	Canada, Baffin Bay, S end of Cobourg Id., 75°40'N 78°58'W, 4.VIII.1935	USNM 22543
TREADWELL, A.L. (1937b)	*H. canadensis*	***capitata***?	Canada, Nova Scotia, Halifax Harbour (from haddock stomachs)	
USCHAKOV, P.V. (1955)	*G. capitata*	***capitata***?	in all Far Eastern seas, 0-3295 m	
	G. nana	***capitata***?	Russia, Sea of Okhotsk, W coast of Kamchatka	
DAY, J.H. (1973b)	*G. capitata*	***celtica***	U.S.A., North Carolina, Beaufort, 120 m [holotype of *G. dayi*]	USNM 51110
	G. oxycephala	***celtica***	U.S.A., North Carolina, Beaufort, 3-120 m	USNM 51112

author	reported species	actual species	localities	examined material
GARDINER, S.L. (1975)	*G. capitata*	***celtica***	U.S.A., North Carolina, off Beaufort, 34°19'N 75°56'W, 130 m, medium sand [holotype of *G. dayi*]	USNM 51110
	G. sp.	***celtica***	U.S.A., North Carolina, off Beaufort, 34°28'N 76°07'W, 40 m	USNM 51112
	G. sp.	***celtica***?	U.S.A., North Carolina, off Beaufort, 34°36'N 76°28'W, 10 m, sand, shells and sandy mud (14 mm)	
GRUBE, E. (1870a)	*G. Rouxii*	***celtica***?	Mediterranean Sea	
O'CONNOR, B.D.S. (1987)	*G. celtica*	***celtica***?	North Sea, S coast of Ireland, English Channel, Mediterranean Sea, 50-200 m, muddy sand	
PARAPAR, J. et al. (1993)	*G. dayi*	***celtica***?	Spain, Iberian coasts, Galacia, Ría de Ferrol (59 mm, 110 Seg.)	
QUATREFAGES, A. DE (1866)	*G. Rouxii*	***celtica***	France, Marseille (200 Seg.)	MNHN A117 partim
DAY, J.H. (1951)	*G. prashadi*	***cinnamomea***?	South Africa, Umhlanga Rocks	
DAY, J.H. (1953)	*G. cirrata*	***cinnamomea***?	South Africa, Cape, St. James	
	G. prashadi	***cinnamomea***?	South Africa, Cape, Knysna estuary, Cape Infanta, St. James	
DAY, J.H. (1957)	*G. prashadi*	***cinnamomea***?	Moçambique, Inhaca Island	
	G. prashadi	***cinnamomea***?	Moçambique, Morrumbene estuary	
	G. prashadi	***cinnamomea***?	South Africa, Umhlanga Rocks (N of Durban)	
DAY, J.H. (1960)	*G. parashadi*	***cinnamomea***?	South Africa, Cape Coast, False Bay St. FAL.211, 34°07.1'S 18°35.6'E, 9.IX.1953, 21.7 m, sand with shells and rocks	
	G. parashadi	***cinnamomea***?	South Africa, Cape Coast, False Bay St. FAL.245, Oatland Pt., 21.IV.1953, 0-3 m, rocks	
	G. parashadi	***cinnamomea***	South Africa, Cape Coast, False Bay St. FB.317, 34°09.5'S 18°28.3'E, 29.IV.1948, 22 m, sand	SAM A20472
DAY, J.H. (1967)	*G. prashadi*	***cinnamomea***?	Moçambique, 26°S 32°E and 23°S 35°E, 0-99 m (45 mm)	
	G. prashadi	***cinnamomea***	South Africa, False Bay, 33°S 18°E - 34°S 23°E, intertidal and estuaries [see DAY 1960]	
	G. prashadi	***cinnamomea***?	South Africa, Natal, 29°S 31°E, intertidal	
EHLERS, E. (1913)	*G. kraussi*	***cinnamomea***	R/V GAUSS, Simonstown, 35°15'S 19°45'E, VII.1903	ZMB 5849
EHLERS, E. (1918)	*G. africana*	***cinnamomea***	Indonesia, Aru Islands, NW of Ngaiboor, 19.II.1908, sand with numerous shells (110 mm, 103 Seg.)	
	G. africana	***cinnamomea***	Indonesia, Aru Islands, Sungi Manumbai, St. 6, 28.III.1908, coarse shell sand	SMF 1987
FAUVEL, P. (1932)	*G. cirrata*	***cinnamomea***?	Byckwan Bay	
	G. parashadi	***cinnamomea***	HMS INVESTIGATOR St. 292, Persian Gulf, 53 fms (8-10 mm) [syntype]	
	G. parashadi	***cinnamomea***	HMS INVESTIGATOR St. 631, Nankuari, 19.XII.1922, 19-30 fms, coarse sand and mud [syntype]	
FAUVEL, P. (1939)	*G. Prashadi*	***cinnamomea***	Vietnam, Nhatrang, récif de Caûda, Ile Tré, Bich Daman, Chantabun, Gulf of Siam (90 mm)	UCO Q 58 (slide)
OKUDA, S. (1940)	*G. prashadi*	***cinnamomea***?	Japan, Ryukyu (Okinawa) Islands, Tinen-saki (52 mm)	
ONG, B. (1995)	*G. prashadi*	***cinnamomea***	Malaysia, Penang, Telok Aling sand flat St. TA 4, 1988-89, intertidal (80 mm)	
TREADWELL, A.L. (1920)	*G. longipinnis*	***cinnamomea***	USS ALBATROSS St. 5113, Philippine Islands, Luzon, Sombrero Island, 1907-10, 159 fms, dark green mud	USNM 17585
APPY, T.D. et al. (1980)	*G. dibranchiata*	***dibranchiata***	Canada, Bay of Fundy, several stations	
CHAMBERLIN, R.V. (1919b)	*G. dibranchiata*	***dibranchiata***?	USS ALBATROSS St. 2305, Atlantic coast: between Cape Hatteras and Nantucket, 35°23'N 74°51'30"W, 21.X.1884, 58 fms, bottom of fine gray and black sand	
DAY, J.H. (1973b)	*G. dibranchiata*	***dibranchiata***?	U.S.A., North Carolina, Beaufort, intertidal-20m	
DÖRJES, J. (1972)	*G. dibranchiata*	***dibranchiata***	U.S.A., Georgia, Sapelo Island	SMF
DÖRJES, J. & HOWARD, J.D. (1975)	*G. dibranchiata*	***dibranchiata***	U.S.A., Georgia, Ogeechee River	SMF
FAUVEL, P. (1943)	*G. dibranchiata*	***dibranchiata***?	Gulf of California 1904-5 (285 mm)	
GARDINER, S.L. (1975)	*G. dibranchiata*	***dibranchiata***?	U.S.A., North Carolina, Intracoastal Waterway at Wrightsville Beach, Banks Channel, and Cape Lookout, sandy or muddy areas or sand mixed with gravel and shells (240 mm)	USNM 52958, 52960

author	reported species	actual species	localities	examined material
GILBERT, K.M. (1984a)	*G. dibranchiata*	***dibranchiata***?	Gulf of Mexico MAFLA 2101K, 26°24'59.6"N 81°15'08.9"W, II.1978, 11 m, fine-very fine sand (af, 73 mm, 148 Seg.)	
	G. dibranchiata	***dibranchiata***?	Gulf of Mexico MAFLA 2207H, 27°57'00.4"N 83°09'00.3"W, II.1978, 19 m, fine-very fine sand	
	G. dibranchiata	***dibranchiata***?	Gulf of Mexico MAFLA 2207I, 27°57'00.4"N 83°09'00.3"W, XI.1977, 19 m, fine-very fine sand	
	G. dibranchiata	***dibranchiata***?	Gulf of Mexico MAFLA 2318E, 29°05'00.8"N 83°45'00.5"W, II.1978, 20 m, medium sand	
	G. dibranchiata	***dibranchiata***?	Gulf of Mexico MAFLA 2419G, 29°46'59.8"N 84°05'00.2"W, IX.1975, 10 m, medium fine sand	
	G. dibranchiata	***dibranchiata***?	Gulf of Mexico MAFLA 2420H, 29°42'N 84°11'W, VII.1976, 14 m, fine-very fine sand	
	G. dibranchiata	***dibranchiata***?	Gulf of Mexico MAFLA 2854D, 29°24'00.1"N 85°42'02.0"W, VIII.1977, 42 m, medium fine sand	
	G. dibranchiata	***dibranchiata***?	Gulf of Mexico SOFLA 2F, 26°45.84'N 83°45.18'W, XI.1980, 24 m, medium sand	
HARTMAN, O. (1940)	*G. dibranchiata*	***dibranchiata***	R/V VELERO III, California, Mission Bay (cs, 150 mm)	
HARTMAN, O. (1945)	*G. dibranchiata*	***dibranchiata***?	U.S.A., North Carolina, Beaufort: Bird, Sheepshead shoals, Fort Macon	
HARTMAN, O. (1950)	*G. dibranchiata*	***dibranchiata***	U.S.A., California, San Mateo County, Moss Beach, shore	
	G. dibranchiata	***dibranchiata***	U.S.A., Lower California, EL Mogote near La Paz and San Lucas Cove, shore	
	G. dibranchiata	***dibranchiata***	U.S.A., Massachusetts, Woods Hole and Vineyard Sound, shore	
	G. dibranchiata	***dibranchiata***	U.S.A., North Carolina, Beaufort	
	G. dibranchiata	***dibranchiata***	U.S.A., Rhode Island, Newport, shore	
	G. dibranchiata	***dibranchiata***	R/V VELERO III St. 1030-40, Mexico, Lower California, off Turtle Bay, 27°39'05"N 114°54'47"W - 27°39'12"N 114°54'12"W, 18.I.1940, 26-31 fms, gray sand with mud	
HARTMAN, O. (1951b)	*G. dibranchiata*	***dibranchiata***?	U.S.A., Gulf of Mexico, Texas, Port Aransas, I.1950 (49 mm)	
KUDENOV, J.D. (1975)	*G. dibranchiata*	***dibranchiata***?	U.S.A., California, El Gulf of Santa Clara, 30°30.5'N 114°30'W, 31.V.1968, sandflat	
MCINTOSH, W.C. (1905)	*G. dibranchiata*	***dibranchiata***?	U.S.A., Gulf of St. Lawrence St. 7, between Anticosti and the Gaspé Peninsula, 1873, 100-220 fms (3-4 inches)	
PETTIBONE, M.H. (1963)	*G. dibranchiata*	***dibranchiata***	U.S.A., Delaware Bay (370 mm, 300 Seg.)	USNM 29391
	G. dibranchiata	***dibranchiata***?	U.S.A., Florida, Seahorse Key	
	G. dibranchiata	***dibranchiata***?	U.S.A., Gulf of St. Lawrence, Bay of Chaleurs, 0-12 fms	
	G. dibranchiata	***dibranchiata***	U.S.A., Maine: Robbinston, St. Croix; Glen Cove, Penobscot; Rockland; Sheepscot River in Boothbay Harbor region; Waites Landing, Casco Bay	USNM 29527
	G. dibranchiata	***dibranchiata***	U.S.A., Maryland, Chesapeake Bay	USNM 29565, 29572
	G. dibranchiata	***dibranchiata***	U.S.A., Massachusetts, Georges Bank, 37-50 fms	
	G. dibranchiata	***dibranchiata***	U.S.A., Massachusetts: Plum Island; Essex; Marblehead; Duxbury; Cape Cod, Barnstable, Orleans, Wellfleet; Woods Hole reg., Elizabeth Island; Nantucket Sound	USNM 29390
	G. dibranchiata	***dibranchiata***	Canada, New Brunswick, St. Andrews	USNM 35952
	G. dibranchiata	***dibranchiata***	U.S.A., New Hampshire: Emerson's Beach, mouth Oyster River; Little Bay	USNM 57844
	G. dibranchiata	***dibranchiata***?	U.S.A., North Carolina, Beaufort	
	G. dibranchiata	***dibranchiata***?	Canada, Nova Scotia, Cape Breton	
	G. dibranchiata	***dibranchiata***	U.S.A., Rhode Island	USNM 29542
	G. dibranchiata	***dibranchiata***	U.S.A., Virginia, Chincoteague Bay	USNM 29539
RENAUD, J.C. (1956)	*G. dibranchiata*	***dibranchiata***?	U.S.A., Miami, Biscayne Bay (60-100 mm)	
RIOJA, E. (1941)	*G. dibranchiata*	***dibranchiata***?	Mexico, Mazatlán (100 mm)	
RIOJA, E. (1959)	*G. dibranchiata*	***dibranchiata***?	Mexico, Isla de Sacrificios	
VERRILL, A.E. (1873)	*R. dibranchiatus*	***dibranchiata***?	U.S.A., Great Egg Harbor, New Jersey, to Long Island Sound; Vineyard Sound; and Massachusetts Bay, 0-8 fms	

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FAUVEL, P. (1913 and 1914)	*G. gigantea*	***fallax***?	St. 40, France, Gulf of Gascogne, 47°11'35"N 3°07'15"W, 15.VII.1886, 63 m, sand with gravel	
FAUVEL, P. (1934)	*G. gigantea*	***fallax***?	Croatia, Istria, Rovigno St. 113, 116	
GRUBE, E. (1870a)	*G. decorata*	***fallax***	France, Roscoff (af, 36 mm, 108 Seg.)	ZMB Q. 4314
	G. fallax	***fallax***	France, Roscoff (118 mm)	ZMB Q. 4316
	G. fallax	***fallax***?	Italy, Triest	
	G. gigantea	***fallax***	France, St. Vaast (360 mm)	ZMB Q. 4318
HARTMAN, O. (1950)	*G. gigantea*	***fallax***?	England, Plymouth	
JOHNSTON, G. (1865)	*G. dubia*	***fallax***	England, Cumbrae, Firth of Clyde	BMNH 1863.11.8. 7
	G. setosa	***fallax***	England, Polperro, Cornwall	BMNH 1862.5.5.1
O'CONNOR, B.D.S. (1987)	*G. gigantea*	***fallax***?	Hebrides, English Channel, S and W coast of Ireland, W coast of France, W coast of Spain, Mediterranean Sea, Atlantic, 15-300 m, coarse sand and gravel	
QUATREFAGES, A. DE (1866)	*G. dubia*	***fallax***	France, Bréhat (120-130 Seg.)	MNHN A119 partim
	G. Rouxii	***fallax***	France, Marseille (200 Seg.)	MNHN A117 partim
GILBERT, K.M. (1984a)	*G.* sp. E	***gilbertae***	Gulf of Mexico MAFLA 2638K, 29°55'29.1"N 88°33'28.2"W, XI.1977, 24 m, sandy silt	USNM 89783
	G. sp. E	***gilbertae***	Gulf of Mexico STOCS 1/IV-2, 26°10'N 97°01'W, W/1976, 27 m, clayey sand [paratype]	USNM 89786
	G. sp. E	***gilbertae***	Gulf of Mexico STOCS 4/I-3, 28°14'N 96°29'W, F/1976, 10 m, clayey sand	USNM 89785
	G. sp. E	***gilbertae***	Gulf of Mexico STOCS 4/I-3, 28°14'N 96°29'W, S/1976, 10 m, clayey sand	USNM 89784
	G. sp. E	***gilbertae***	Gulf of Mexico STOCS 5/IV-1, 26°10'N 96°54'W, F/1976, 37 m, silty clayey sand	USNM 89788
	G. sp. E	***gilbertae***	Gulf of Mexico STOCS 5/IV-3, 26°10'N 96°54'W, S/1976, 37 m, silty clayey sand [holotype]	USNM 89789
	G. sp. E	***gilbertae***	Gulf of Mexico STOCS 5/IV-4, 26°10'N 96°54'W, Sp/1976, 37 m, silty clayey sand [paratype; formerly USNM 89787]	SMF 9600
	G. sp. E	***gilbertae***	Gulf of Mexico STOCS 5/IV-6, 26°10'N 96°54'W, Sp/1976, 37 m, silty clayey sand	USNM 89790
	G. sp. E	***gilbertae***?	Gulf of Mexico, Mobile Bay, IEC St. 732 004-004, 30°09.5'N 88°03.7'W, VI.1980, 14 m, sand	
BERKELEY, E. & BERKELEY, C. (1939)	*G. lancadivæ*	***guatemalensis***	R/Y STRANGER 1937, San José de Guatemala, Guatemala, 10 fms [holo- and paratype]	USNM 35980 + SMF 9392
AUGENER, H. (1927c)	*G. americana*	***lamelliformis***	New Zealand, Tauranga, 2-4 Fd.	ZMB 6666 [partim]
KNOX, G.A. (1960b)	*G. lamellipodia*	***lamelliformis***?	New Zealand, Evans Bay, caught by a fisherman in a net, VII.1898 (990 mm, 528 Seg.)	
ARWIDSSON, I. (1899)	*G. lapidum*	***lapidum***?	Sweden, Bohuslän, Väderöarne, 58°35'N (47 mm, 120 Seg.)	
	G. lapidum	***lapidum***?	France, Bretagne, 44-53 m	
	G. lapidum	***lapidum***?	Portugal, Bay of Sétubal, 44-53 m, gravel ground	
	G. lapidum	***lapidum***?	Norway, Haugesund (70 mm, 132 Seg.)	
	G. lapidum	***lapidum***?	Germany, Helgoland	
	G. lapidum	***lapidum***?	Sweden, Mölle, Skåne, 12.IX.1889	
	G. lapidum	***lapidum***?	Sweden, Väderöarne, 28 m (epitokous)	
AUGENER, H. (1922a)	*G. papillosa*	***lapidum***	Juan Fernandez, Cumberland Bay, 6.XII.1916, 20-35 m, clay (af, 34 mm, 94 Seg.)	
	G. papillosa	***lapidum***	Juan Fernandez, Masatierra, 1.IV.1917, 30-40 m, sand with lime algae	

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AUGENER, H. (1922a)	*G. papillosa*	***lapidum***	Juan Fernandez, Masatierra, 28.III.1917, 20-35 m, lime algae	
DAY, J.H. (1960)	*G. papillosa*	***lapidum***?	South Africa, Cape Coast, Algoa Bay St. LIZ.25, 34°00.4'S 25°44.5'E, 11.IV.1954, 39 m, coarse sand with shells	
	G. papillosa	***lapidum***?	South Africa, Cape Coast, Algoa Bay St. LIZ.38	
	G. papillosa	***lapidum***	South Africa, Cape Coast, False Bay St. FB.307, 34°07.5'S 18°31'E, 22.II.1947, 27.5 m, rocks	SAM 20471
	G. papillosa	***lapidum***?	South Africa, Cape Coast, Mossel Bay St. MB.74, 34°09.1'S 22°07.2'E, 19.I.1956, 12 m, sand with shells and rocks	
DAY, J.H. (1967)	*G. papillosa*	***lapidum***	South Africa, Cape Province, 34°S 18°E - 34°S 23°E and 33°S 28°E, 1-499 m (20-30 mm) [see DAY 1960]	
	G. papillosa	***lapidum***?	South Africa, Natal 30°S 30°E, 1-99 m	
EHLERS, E. (1868)	*G. capitata*	***lapidum***?	U.S.A., California, Mendocino (epitokous)	
EHLERS, E. (1908)	*G. capitata*	***lapidum***	R/V VALDIVIA 1898-99 St. 167, 1.9 sea miles of New Amsterdam, 37°45'S 77°33'E, 496 m	ZMB 4470, 10594
FAUVEL, P. (1934)	*G. lapidum*	***lapidum***?	Croatia, Istria, Rovigno St. 114, 116	
GARDINER, S.L. (1975)	*G. papillosa*	***lapidum***?	U.S.A., North Carolina, off Beaufort, 34°19'N 75°56'W, 130 m, fine to coarse sand (20 mm)	
GILBERT, K.M. (1984a)	*G. papillosa*	***lapidum***?	Gulf of Mexico MAFLA 2104F, 26°25'00.0"N 83°23'00.8"W, V.1975, 53 m, coarse sand (af, 18 mm, 60 Seg.)	
	G. papillosa	***lapidum***?	Gulf of Mexico MAFLA 2423I, 29°37'00.8"N 84°17'00.2"W, VII.1976, 19 m, silty fine sand	
	G. papillosa	***lapidum***?	Gulf of Mexico MAFLA 2424H, 29°13'00.7"N 85°00'01.4"W, VII.1976, 27 m, medium sand	
	G. papillosa	***lapidum***?	Gulf of Mexico SOFLA 12A, 26°16.72'N 83°47.67'W, VIII.1981, 90 m, fine sand	
	G. papillosa	***lapidum***?	Gulf of Mexico SOFLA 4, 26°45.81'N 83°32.12'W, XI.1980, 56 m, medium sand	
	G. papillosa	***lapidum***?	Gulf of Mexico STOCS SB3-1, 27°26'06"N 96°31'47"W, F/1976, 82 m	
	G. papillosa	***lapidum***?	U.S.A., North Carolina, Beaufort, IV.1965, 130 m, sandy mud	
GRUBE, E. (1870a)	*G. capitata*	***lapidum***	France, St. Vaast	ZMB Q. 4305
	G. setosa	***lapidum***?	France, Roscoff	
HARTMAN, O. (1940)	*G. papillosa*	***lapidum***?	R/V VELERO III St. 376-35, Peru, Independencia Bay, Lee side of Viejas Island, 14°15'35"S 76°11'35"W, 13.I.1935, 7 fms, rock (af, 20 mm, 85 Seg.)	
JOHNSTON, G. (1865)	*G. capitata*	***lapidum***	Scotland, Firth of Clyde	BMNH 1863.11.8. 8 [partim]
KEFERSTEIN, W. (1862)	*G. capitata*	***lapidum***?	France, St. Vaast, VIII.-X.1861, low tide beach (cs, 70-80 mm)	
KINBERG, J.G.H. (1865)	*G. papillosa*	***lapidum***	R/V EUGENIE, Chile, Valparaiso, 1851-3, 6-8 fms	SSM 668+669
KINBERG, J.G.H. (1910)	*G. papillosa*	***lapidum***	R/V EUGENIE, Chile, Valparaiso, 1851-3	SSM 668+669
O'CONNOR, B.D.S. (1987)	*G. lapidum*	***lapidum***	Iceland, Faroes, Northern North Sea, North Sea, W and S coast of Ireland, English Channel, W coast of France, Azores, 0-200 m, medium-coarse sand, with gravel and maerl	
STØP-BOWITZ, C. (1941)	*G. lapidum*	***lapidum***?	Norway, several stations	
DAY, J.H. (1951)	*G. subænea*	***macintoshi***?	South Africa, Durban Bay	
	G. subænea	***macintoshi***	Moçambique, Inhaca Island, Delagoa Bay	SAM A20474
DAY, J.H. (1960)	*G. unicornis*	***macintoshi***	R/V AFRICANA II St. 935, South Africa, Cape Coast, 34°23.8'S 18°41.1'E, 12.III.1948, 88 m	SAM A20478 [partim]
DAY, J.H. (1967)	*G. subaenea*	***macintoshi***?	Madagascar, 0-99 m (100 mm)	
	G. subaenea	***macintoshi***	N of Moçambique, 26°S 32°E and 23°S 35°E, 0-99 m [see DAY 1951]	SAM A20474

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DAY, J.H. (1967)	*G. subaenea*	***macintoshi***?	South Africa, Natal, 29°S 31°E, 0-99 m	
DÖRJES, J. (1978)	*G. onomichiensis*	***macintoshi***	Taiwan	SMF
FAUVEL, P. (1919)	*G. subænea*	***macintoshi***	Madagascar, Tuléar, Saint-Augustin, No. 5021 and 5026 (130 mm)	
FAUVEL, P. (1933)	*G. subaenea*	***macintoshi***?	Gulf of Pei Tcheu Ly St.: 432-33, 436, 438-40, 445, 447, 512, 515, Tcheu-Fou, I.1931, shore, sand (200 mm)	
	G. subaenea	***macintoshi***?	Gulf of Pei Tcheu Ly, Chan-Hai-Koan, VIII.1931	
GIBBS, P.E. (1971)	*G. subaenea*	***macintoshi***?	Solomon Islands, Guadalcanal, Komimbo Bay, 18-20.VII. and 16-21.VIII.1965, littoral, fine coral mud to coarse sand and shell gravel	
HARTMANN-SCHRÖDER, G. (1974a)	*G. subanaea*	***macintoshi***?	Moçambique, Inhambane: mud flat on N border of city, 26.IX.1967, middle and lower eulittoral, fine sand to mud with detritus or peat (130 mm)	
	G. subanaea	***macintoshi***?	Moçambique, Lourenco Marques: mangrove 2 km N of hotel, 22.IX.1967, mud with fine sand, detritus and plant material	
	G. subanaea	***macintoshi***?	Moçambique, Lourenco Marques: mud flat in front of hotel "Costa do Sol", 17.IX.1967, sand to mud with detritus and seaweed	
	G. subanaea	***macintoshi***?	Moçambique, Lourenco Marques: mud flat in front of hotel "Costa do Sol", 18.IX.1967, coarse and medium sand with shells and detritus	
	G. subanaea	***macintoshi***?	Moçambique, Lourenco Marques: mud flat in front of hotel "Costa do Sol", 20+21.IX.1967, fine sand with algae	
HARTMANN-SCHRÖDER, G. (1979)	*G. subaenea*	***macintoshi***	Australia, Pt. Hedland, mangrove in Pretty Pool, 28.IX.1975, mud with sand and clay (40 mm)	
HARTMANN-SCHRÖDER, G. (1980)	*G. subaenea*	***macintoshi***?	NW coast of Australia, Dampier, Hersines Cove, 2.X.1975, fine sand to mud with detritus	
	G. subaenea	***macintoshi***?	NW coast of Australia, Dampier, Hersines Cove, mud flat, 3.X.1975, fine sand	
HARTMANN-SCHRÖDER, G. (1990)	*G. subaena*	***macintoshi***?	Australia, Gladstone, mangrove-Priel S of Tannum Sands, 28.I.1976, upper to middle eulittoral, mud to fine sand (90 mm)	
	G. subaena	***macintoshi***?	Australia, Maryborough, Great Sandy Strait nearBoonooroo, 26.I.1976, fine sand with detritus	
	G. subaena	***macintoshi***?	Australia, Maryborough, Hervey Bay, sand flat near Vernon Point, 25.I.1976, upper eulittoral, sand flat	
MONRO, C.C.A. (1937)	*G. subænea*	***macintoshi***?	John Murray Exp. 1933-34 St. 180, Gulf of Aden, 397 m	
OKUDA, S. & YAMADA, M. (1954)	*G. subaenea*	***macintoshi***?	Japan, Matsushima Bay, Tona (230 mm, 232 Seg.)	
RHO, B.-J. & LEE, J.-W. (1987)	*G. subaenea*	***macintoshi***	South Korea, Kunsan, 21.XI.1967 (af, 170 mm)	
USCHAKOV, P.V. & WU, B.-L. (1965)	*G. subaenea*	***macintoshi***	China, Dairen, Shinghai Park, lower beach (160 mm)	
	G. subaenea	***macintoshi***	China, N coastal water of the Gulf of Chihli, at Chinwangtao, beach, sandy	
	G. subaenea	***macintoshi***?	R/V VENUS, China, Gulf of Chihli, 8 m, silt	
	G. subaenea	***macintoshi***	China, Tientsin, T'ang-ku, beach, silty beach	
	G. subaenea	***macintoshi***?	China, Tsingtao, at Teng-chow, city pier; Hwang-Tao Island and Sui-tse-Tao Island, beach, sandy beach	
	G. subaenea	***macintoshi***	China, Yen-t'ai, at Isthmus of Chefoo, beach	
ANNENKOVA, N.P. (1937)	*G. convoluta*	***macrobranchia***?	Northern part of the Japan Sea, Olga Bay and Southern part of Tartar Strait, 22-31 m (70 mm)	
BUZHINSKAJA, G.N. (1967)	*G. convoluta*	***macrobranchia***?	Sea of Japan, Possjet Bay (140 mm)	
BUZHINSKAJA, G.N. (1985)	*G. convoluta*	***macrobranchia***?	Russia, S Sakhalin, 7-73 m (206 mm)	
BUZHINSKAJA, G.N. (1992)	*G. orientalis*	***macrobranchia***	R/V TOPOROK St. 1, Sea of Japan, Off S Sakhalin, 14.VIII.1949, 21-73 m, sand, sandy mud, muddy sand, sand and pebble, stones and shells (af, 193 mm, 225 Seg.) [paratype]	
	G. orientalis	***macrobranchia***	R/V TOPOROK St. 66, Sea of Japan, Off S Sakhalin, 30.VIII.1949 [paratype]	

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BUZHINSKAJA, G.N. (1992)	*G. orientalis*	***macrobranchia***	R/V TOPOROK St. 73, Sea of Japan, Off S Sakhalin, 24.IX.1948 [paratype]	
	G. orientalis	***macrobranchia***	R/V TOPOROK St. 80, Sea of Japan, Off S Sakhalin, 28-29.IX.1948 [paratype]	
	G. orientalis	***macrobranchia***	R/V TOPOROK St. 94, Sea of Japan, Off S Sakhalin, 2.X.1948 [holotype]	
	G. orientalis	***macrobranchia***	R/V TOPOROK St. 94, Sea of Japan, Off S Sakhalin, 2.X.1948, 30 m, silt sand [paratype]	
	G. orientalis	***macrobranchia***	R/V TOPOROK St. 97, Sea of Japan, Off S Sakhalin, 3.X.1948 [paratype]	
HARTMAN, O. (1940)	*G. convoluta*	***macrobranchia***?	R/V VELERO III St. 770-38, Guatemala, off San Jose Light, 13°53'40"N 91°10'30"W, 11.I.1938, 7-11 fms, sand with shells and mud	
	G. convoluta	***macrobranchia***?	R/V VELERO III St. 903-38, California, Anaheim Slough, near Long Beach, 33°43'15"N 118°03'45"W, 5.XII.1938, shore, fine sand and mud flats	
	G. convoluta	***macrobranchia***?	R/V VELERO III, California, Mission Bay	
HARTMAN, O. (1950)	*G. convoluta*	***macrobranchia***	U.S.A., California, Mission Bay	LACM N2541
	G. convoluta	***macrobranchia***?	U.S.A., California, Monterey Bay, 73 m	
	G. convoluta	***macrobranchia***	Mexico, Lower California, Ensenada	LACM N2545
	G. convoluta	***macrobranchia***	Mexico, Lower California, Todos Santos	LACM N2980
	G. convoluta	***macrobranchia***	R/V VELERO III St. 617-37, Mexico, Lower California, San Juanico Bay, 26°11'50"N 112°29'05"W, 2.III.1937, 24 fms, sand and kelp	LACM
	G. convoluta	***macrobranchia***	R/V VELERO III St. 1441-41, California, Corona del Mar, 33°35'43"N 117°52'38"W - 33°36'12"N 117°52'56"W, 17.XII.1941, shore, rocks and muddy sand flats	LACM
	G. convoluta	***macrobranchia***	R/V VELERO III St. 1450-42, California, Corona del Mar, Newport Harbor, 33°36'04"N 117°52'48"W, 1.VI.1942, shore	LACM
	G. convoluta	***macrobranchia***	R/V VELERO III St. 1451-42, California, Corona del Mar, Newport Harbor, 33°36'04"N 117°52'48"W, 2.VI.1942, shore, rocks and sand flats [pf]	LACM
	G. convoluta	***macrobranchia***	R/V VELERO III St. 1457-42, California, Corona del Mar, 9.XI.1942, shore	LACM
	G. convoluta	***macrobranchia***	R/V VELERO III St. 1505-43	LACM
TREADWELL, A.L. (1914)	*G. alba*	***macrobranchia***	U.S.A., San Pedro	LACM N2901
	G. longipinnis	***macrobranchia***	U.S.A., San Pedro	LACM N3160
USCHAKOV, P.V. (1955)	*G. tridactyla*	***macrobranchia***?	Sea of Japan, SW part of Sea of Okhotsk, S Kuril Islands, 1-50 m	
DAY, J.H. (1960)	*G. rouxii*	***nicobarica***	South Africa, Cape Coast St. TRA.80, 32°23'S 17°48'E, 4.II.1953, 143 m, green mud	SAM A20473
	G. rouxii	***nicobarica***?	South Africa, Cape Coast, False Bay St. FAL.237, 34°22.7'S 18°43.1'E, 10.IX.1953, 79 m, green mud	
DAY, J.H. (1973a)	*G. decipiens*	***nicobarica***	India, S of Bombay, Ratnagiri, Mirya Bander, 16.II.1969, shore, muddy sand (62 mm, 125 Seg.)	SAM A20469
GALLARDO, V. (1968)	*G. nicobarica*	***nicobarica***?	R/Y STRANGER St. 350, 12°09'22"N 109°19'33"E, South Vietnam, Nha Trang, 48 m, mud (af, 23 mm, 100 Seg.)	
	G. nicobarica	***nicobarica***?	R/Y STRANGER St. 353, NHA TRANG, 12°07'48"N 109°18'14"E, South Vietnam, 46 m, mud	
IZUKA, A. (1912)	*G. chirori*	***nicobarica***?	Japan, Kagoshima in Prov. Satsuma	
	G. chirori	***nicobarica***?	Japan, Kanazawa in Prov. Musashi	
	G. chirori	***nicobarica***?	Japan, Kojima Gulf in Prov. Bizen	
	G. chirori	***nicobarica***?	Japan, Tomo Harbour in Prov. Bingo	
	G. goesi	***nicobarica***?	Japan, Gulf of Tokyo (170 mm, 200 Seg.)	
	G. goesi	***nicobarica***?	Japan, Misaki, 0-60 fms	
	G. goesi	***nicobarica***?	Japan, Wakkanai in Prov. Kitami	
	G. goesi	***nicobarica***?	Japan, Watanoha in Prov. Rikuzen	
	G. goesi	***nicobarica***	USS ALBATROSS, Japan, Sendai Bay, 18 fms	USNM 5338

author	reported species	actual species	localities	examined material
IZUKA, A. (1912)	*G. goesi*	***nicobarica***?	USS ALBATROSS, Japan, Suruga Bay, 65 fms	
MOORE, J.P. (1903)	*G. gœsi*	***nicobarica***	USS ALBATROSS St. 3767, Sendai Bay, 1900, 14-18 fms	USNM 5338
	G. gœsi	***nicobarica***	USS ALBATROSS St. 3775, Sendai Bay, 1900, 57 fms	USNM 5355
PILLAI, T.G. (1961)	*G. rouxii*	***nicobarica***?	Sri Lanka, Tambalagam Lake, XI.1959 (83.5 mm, 138 Seg.)	
TREADWELL, A.L. (1936)	*G. rouxii*	***nicobarica***	China, Amoy	USNM 22533
FAUVEL, P. (1933)	*G. onomichiensis*	***onomichiensis***?	Gulf of Pei Tcheu Ly St.: 429, 446, 448, 511, 513-4, Tcheu-Fou, I.1931, shore, sand	
GALLARDO, V. (1968)	*G. onomichiensis*	***onomichiensis***	R/V MAO TIEN St. 288, South Vietnam, Nha Trang, 5 m, coarse sand with shell debris (cs, 30 mm, 120 Seg.)	
	G. onomichiensis	***onomichiensis***	R/V MAO TIEN St. 337, South Vietnam, Nha Trang, 15 m, brown coarse sand	
IZUKA, A. (1912)	*G. onomichiensis*	***onomichiensis***?	Japan, Misaki [syntypes]	
LEE, J.H. (1984)	*G. onomichiensis*	***onomichiensis***?	Yellow Sea St. 402, 701, 704, 710, 1304, VIII.1982, 5-60 m, clayey sand or sand (70 mm, 120 Seg.)	
MONRO, C.C.A. (1934)	*G. onomichiensis*	***onomichiensis***?	China, Amoy	
OKUDA, S. (1938)	*G. onomichiensis*	***onomichiensis***?	Japan, Izu Peninsula, Susaki, vicinity of the Mitsui Institute (cs, 30 mm)	
USCHAKOV, P.V. & WU, B.-L. (1965)	*G. robusta*	***onomichiensis***?	China, Tsingtao, at Teng-chow, 19.XII.1952, beach, silty sand (220 mm)	
AUGENER, H. (1922b)	*G. americana*	***ovigera***	S Australia, Adelaide (270 mm)	
AUGENER, H. (1924)	*G. americana*	***ovigera***?	New Zealand, Akaroa Harbour, 14.XII.1914, shore, under stones (257 mm)	
	G. americana	***ovigera***?	New Zealand, Auckland, Ponui Island, 24.XII.1914, shore, under stones	
	G. americana	***ovigera***?	New Zealand, Auckland, Tiri Tiri, 28.XII.1914, 15 fd, mud	
	G. americana	***ovigera***?	New Zealand, Cloudy Bay, 19.I.1915, 19 fd	
	G. americana	***ovigera***?	New Zealand, Colville Channel, 21.XII.1914, 35 fd, sand and mud	
	G. americana	***ovigera***?	New Zealand, Plimmerton, 15.I.1915, shore	
	G. americana	***ovigera***?	New Zealand, Stewart Island, Paterson Inlet, 18.II.1914, shore	
	G. americana	***ovigera***?	New Zealand, Summer, beach, under stones	
AUGENER, H. (1927c)	*G. americana*	***ovigera***?	New Zealand, Tauranga-Bay	
BENHAM, W.B. (1909)	*G. ovigera*	***ovigera***?	New Zealand Trawling Exp. 1907 St. 12, Molyneux Bay, 20-46 fms, sand	
	G. ovigera	***ovigera***?	New Zealand Trawling Exp. 1907 St. 14, Green Island, 25-30 fms, pebble and gravel	
	G. ovigera	***ovigera***?	New Zealand Trawling Exp. 1907 St. 26, S of Oamaru, 40-43 fms, fine sand	
	G. ovigera	***ovigera***?	New Zealand Trawling Exp. 1907 St. 30, ENE of Oamaru, 35 fms, ooze	
	G. ovigera	***ovigera***?	New Zealand Trawling Exp. 1907 St. 89, off Cape Runaway (from stomach of Zeus faber)	
BLACK, J.H. (1971)	*G. americana*	***ovigera***	Australia, Port Phillip Bay St. 289 area 42, 2 fm, sand	MV F 41651
HARTMANN-SCHRÖDER, G. (1985)	*G. americana*	***ovigera***?	Australia, Port Augusta, Blanche Harbour, 5-6.XII.1975, sand to sandy mud with shells (150 mm)	
	G. americana	***ovigera***?	Australia, Port Lincoln, Proper Bay, S end of Bay, 4.XII.1975, sand and shells	
HUTCHINGS, P.A. (1974)	*G. americana*	***ovigera***?	Australia, New South Wales, S of Godwin Island and opposite Wallis Lake, sand	
HUTCHINGS, P. & MURRAY, A. (1984)	*G. americana*	***ovigera***?	Australia, New South Wales, Botany Bay, Towra Point, 10.II.1981	
	G. americana	***ovigera***?	Australia, New South Wales, Botany Bay, Towra Point, 11.II.1975	
	G. americana	***ovigera***?	Australia, New South Wales, Hawkesbury River 1-1-1, 4 m, sandy mud	
	G. americana	***ovigera***?	Australia, New South Wales, Hawkesbury River 1-2-1, 12 m, muddy sand	

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HUTCHINGS, P. & MURRAY, A. (1984)	*G. americana*	***ovigera***?	Australia, New South Wales, Hawkesbury River 1-3-2, 10 m, muddy sand	
	G. americana	***ovigera***?	Australia, New South Wales, Hawkesbury River 1-4-3, 10 m, muddy sand	
	G. americana	***ovigera***?	Australia, New South Wales, Hawkesbury River 2-2-2, 5 m, sandy mud	
	G. americana	***ovigera***?	Australia, New South Wales, Jervis Bay, Murray's Beach, IV.1972	
	G. americana	***ovigera***?	Australia, New South Wales, Lake Macquarie, VII.1977	
	G. americana	***ovigera***?	Australia, New South Wales, Lake Merimbula, 5.X.1975	
	G. americana	***ovigera***?	Australia, New South Wales, Port Hacking, Maianbar, 4.XI.1975	
HUTCHINGS, P.A. & RAINER, S. (1979)	*G. americana*	***ovigera***?	Australia, New South Wales, Pittwater, Careel Bay, 1.IX.1974 (50-100 mm)	
	G. americana	***ovigera***?	Australia, New South Wales, Pittwater, Careel Bay, 11.XII.1973	
	G. americana	***ovigera***?	Australia, New South Wales, Pittwater, Careel Bay, 30.VII.1973	
	G. americana	***ovigera***?	Australia, New South Wales, Pittwater, Careel Bay, 30.VII.1973	
	G. americana	***ovigera***?	Australia, New South Wales, Pittwater, Careel Bay, 30.VII.1973	
	G. americana	***ovigera***?	Australia, New South Wales, Pittwater, Careel Bay, 6.II.1973	
KNOX, G.A. (1960b)	*G. americana*	***ovigera***?	New Zealand, 3 miles ENE of Cape Saunders, 11.V.1925, 60 fms (290 mm)	
	G. americana	***ovigera***?	New Zealand, Banks Peninsula, Barry's Bay, 16.IV.1949, intertidal, sandy beach	
	G. americana	***ovigera***?	New Zealand, Banks Peninsula, Menzies Bay, VIII.1946, 08. 1949, 30.VII.1951	
	G. americana	***ovigera***?	New Zealand, Banks Peninsula, Squally Bay, 26.VIII.1949, intertidal, under stones	
	G. americana	***ovigera***?	New Zealand, Christchurch, Heathcote estuary, intertidal	
	G. americana	***ovigera***?	New Zealand, Lyttelton Harbour, 1950	
	G. americana	***ovigera***?	New Zealand, Manukau Harbour, VII.1926	
	G. americana	***ovigera***?	New Zealand, Otago Harbour, SE of Quarantine Island, 6.X.1956, intertidal, sand bank	
	G. americana	***ovigera***?	New Zealand, Tamaki Heads, 13.VII.1926	
	G. americana	***ovigera***?	NZOI St. A 319, Milford Sound, 26.I.1957, 154 fms	
	G. americana	***ovigera***?	NZOI St. A 320, Milford Sound, 27.I.1957, 130 fms	
	G. americana	***ovigera***?	NZOI St. A 321, Milford Sound, centre Stirling Basin, 28.I.1957	
	G. americana	***ovigera***?	R/V ALERT St. 7, Tasman Bay, Adele Island, West beach, 31.XII.1951	
	G. americana	***ovigera***?	R/V GALATHEA St. 608, Milford Sound, 19.I.1951, 290 m	
	G. americana	***ovigera***?	R/V GALATHEA St. 609, Milford Sound, 18.I.1952, 128 m	
	G. americana	***ovigera***?	R/V GALATHEA St. 612, Milford Sound, 19.I.1952, 161 m	
	G. americana	***ovigera***?	R/V GALATHEA St. 613, Milford Sound, 19.I.1952, 219 m	
	G. americana	***ovigera***?	R/V GALATHEA St. 619, Milford Sound, 19.I.1952, 139 m	
KNOX, G.A. & CAMERON, D.B. (1971)	*G. americana*	***ovigera***?	Australia, Victoria, Port Phillip Bay St. 108, area 42, 2 fm, sand	
	G. americana	***ovigera***?	Australia, Victoria, Port Phillip Bay St. 201, area 2, 3.5 fm, dark gray to blackish clay	
	G. americana	***ovigera***	Australia, Victoria, Port Phillip Bay St. 210-212, area 11-13, 8-11 fm, silty clay to sandy silt	MV F 41645
	G. americana	***ovigera***?	Australia, Victoria, Port Phillip Bay St. 242, area 61, 11 fm, silty sand	
	G. americana	***ovigera***?	Australia, Victoria, Port Phillip Bay St. 245, area 63, 9 fm, silty sand	
	G. americana	***ovigera***?	Australia, Victoria, Port Phillip Bay St. 286, area 28, 5 fm, silty clay	
	G. americana	***ovigera***?	Australia, Victoria, Port Phillip Bay St. 300, area 26, 3 fm, clayey sand	

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KNOX, G.A. & CAMERON, D.B. (1971)	*G. americana*	***ovigera***?	Australia, Victoria, Port Phillip Bay St. 317, area 29, 4.5 fm, silty sand	
RULLIER, F. (1965b)	*G. americana*	***ovigera***?	Australia, 0.75 miles SW of M3 red beacon, 10.XI.1961	
	G. americana	***ovigera***?	Australia, 0.75 miles SW of M3 red beacon, 10.XI.1961 (80 mm)	
	G. americana	***ovigera***?	Australia, 8 miles E of Scarborough, 10.XI.1961, 30 ft., fine sand (60 mm)	
	G. americana	***ovigera***?	Australia, Dunwich, Moreton Bay, 2.VI.1962, subtidal (100 mm, 250 Seg.)	
	G. americana	***ovigera***?	Australia, SW of Peel I., Moreton Bay, 5.XII.1961, 5-6 fm (10 mm)	
	G. americana	***ovigera***?	Australia, NW of Hanlon Light, 12.X.1961, muddy sand (150 mm)	
ARWIDSSON, I. (1899)	*G. ehlersi*	***oxycephala***	Haiti	SSM 682
AUGENER, H. (1906)	*G. oxycephala*	***oxycephala***	Barbados nr. 298, 128 fms	MCZ
BERKELEY, E. & BERKELEY, C. (1941)	*G. gigantea*	***oxycephala***?	U.S.A., Corona Del Mar	?USNM 35946
BERKELEY, E. & BERKELEY, C. (1942)	*G. gigantea*	***oxycephala***	Canada, Vancouver Island, Barclay Sound and the coast as far N as Amphitrite Point, 70 m	USNM 35947
BERKELEY, E. & BERKELEY, C. (1948)	*G. gigantea*	***oxycephala***	Canada, W coast Vancouver Island, 35 fms	USNM 35947
DAY, J.H. (1960)	*G. benguellana*	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.51, 34°09.3'S 18°49.6'E, 25.VI.1952, 18 m, rocks and sand	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.63, 34°17.5'S 18°49.2'E, 29.VII.1952, 22 m, sand	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.65, 34°17.3'S 18°48.7'E, 29.VII.1952, 37-38 m, sand and shells	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.206, 34°17.6'S 18°39.2'E, 10.IX.1953, 62 m, sand and shells	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.209, 34°06.8'S 18°40.3'E, 10.IX.1953, 29 m, sand and shells	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.233, 34°15.3'S 18°44.8'E, 10.IX.1953, 48 m, sand with shells, gravel and rocks	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.250, 34°22.7'S 18°32.1'E, 10.IX.1953, 79 m, green mud	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.349, 34°08.7'S 18°31.6'E, 31.I.1959, 27 m, white sand	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.365, 34°09.2'S 18°46.6'E, 25.II.1959, 30 m, rocks	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, False Bay St. FAL.378, 34°18.7'S 18°37.2'E, 25.II.1959, 72 m, green sand with shells	
	G. benguellana	***oxycephala***	South Africa, Cape Coast, Lambert's Bay St. LAM.26, 32°04.9'S 18°17.5'E, 18.I.1957, 27 m, sand with shells and rocks	SAM A20468, BMNH 1963.1.79
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, Lambert's Bay St. LAM.35, 32°05.5'S 18°17.7'E, 19.I.1957, 27.5 m, shells and rocks	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, Lambert's Bay St. LAM.40, 32°05.5'S 18°17.6'E, 19.I.1957, 28 m, sand and shells	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, Lambert's Bay St. LAM.41, 32°05'S 18°17.7'E, 21.I.1957, 20 m, sand and shells	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, Lambert's Bay St. LAM.49, 32°04.8'S 18°18.1'E, 21.I.1957, 10 m, sand and rocks	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, Lambert's Bay St. LAM.52, 32°04.7'S 18°18.2'E, 21.I.1957, 17 m, sand	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, Mossel Bay St. MB.62, 34°04.3'S 22°14.2'E, 18.I.1956, 18.5 m, coarse sand with shells and rocks	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, South Coast St. SCD.109, 34°35'S 21°11'E, 23.VII.1959, 75 m, coarse sand with shells and stones	
	G. benguellana	***oxycephala***?	South Africa, Cape Coast, Table Bay St. TB.304, 33°48'S 18°24.3'E, 11.II.1947, 16 m, shells and gravel	

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DAY, J.H. (1960)	*G. benguellana*	***oxycephala***?	South Africa, Cape Coast, Table Bay St. TB.322, 33°48.6'S 18°24.6'E, 15.XII.1957, 15 m, shells and stones	
DAY, J.H. (1967)	*G. benguellana*	***oxycephala***	South Africa, Cape Province, 32°S 17°E - 34°S 23°E, 1-499 m (100 mm) [see DAY 1960]	
	G. benguellana	***oxycephala***?	SW Africa, 28°S 16°E and 28°S 13°E, 1-499 m	
DETINOVA, N.N. (1985)	*G.* sp.	***oxycephala***?	R/V ACADEMIC MSTISLAV KELDYSH St. 318-2, 58°36'7"N 30°07'7"W - 58°36'0"N 30°06'6"W, 1413-1560 m (37 mm)	
	G. sp.	***oxycephala***?	R/V ACADEMIC MSTISLAV KELDYSH St. 390, 58°31'4"N 34°54'5"W - 58°33'9"N 34°52'4"W, 2930-2951 m	
DÖRJES, J. (1972)	*G.* cf. *capitata*	***oxycephala***	U.S.A., Georgia, Sapelo Island	SMF
EHLERS, E. (1868)	*G. lapidum*	***oxycephala***?	France, St. Malo (45 mm, 118 Seg.; epitokous)	
FAUCHALD, K. (1972)	*G. oxycephala*	***oxycephala***?	R/V VELERO IV St. 1921-49, 1 3/4 miles from Smith Bluff, 28°51'41"N 118°15'25"W - 28°51'20"N 118°15'31"W, 19.XII.1949, 110-123 fms, rock	
FAUVEL, P. (1932)	*G. lancadivae*	***oxycephala***?	Sri Lanka, Pearl Bank	
	G. lancadivae	***oxycephala***?	HMS INVESTIGATOR St. 337, Laccadive Sea, 9°43'N 75°35'E, 27.IV.1904, 271 fms, soft green mud and fine sand	
	G. lancadivae	***oxycephala***?	HMS INVESTIGATOR St. 379, Burma, off Ayab, 250 fms	
	G. lancadivae	***oxycephala***?	HMS INVESTIGATOR St. 383, off Burma, 17°18'N 94°08'E, 23.XI.1908, 517 fms, soft green mud	
	G. lancadivae	***oxycephala***?	HMS INVESTIGATOR St. 650, Maledives, Fehendu	
	G. lancadivae	***oxycephala***?	Persian Gulf, Kuwait Harbour	
	G. lancadivae	***oxycephala***	India, Madras Coast	?ZSI W 2732/1
GALLARDO, V. (1968)	*G.* ? *capitata*	***oxycephala***	R/V MAO TIEN St.: 002, 138, 211, 213, 224, 275, 288; R/V STRANGER St.: 168, 169, 170; South Vietnam, Nha Trang, 3-24 m, mud to coarse sand (af, 30 mm)	
GARDINER, S.L. (1975)	*G. oxycephala*	***oxycephala***?	U.S.A., North Carolina, off Beaufort, 34°36'N 76°28'W, 10 m, sand (45 mm)	
GILBERT, K.M. (1984a)	*G.* sp. A	***oxycephala***	Gulf of Mexico MAFLA 2207I, 27°57'00.4"N 83°09'00.3"W, VIII.1977, 19 m, fine-very fine sand (32.5 mm, 106 Seg.; 7-9 chaetigers uniramous)	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2207K, 27°57'00.4"N 83°09'00.3"W, XI.1977, 19 m, fine-very fine sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2209I, 27°52'30.5"N 83°33'59.0"W, VIII.1977, 34 m, clayey, sandy silt	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2318D, 29°05'00.8"N 83°45'00.5"W, II.1978, 20 m, medium sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2318F, 29°05'00.8"N 83°45'00.5"W, VII.1976, 20 m, medium sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2318K, 29°05'00.8"N 83°45'00.5"W, VII.1976, 20 m, medium sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2419G, 29°46'59.8"N 84°05'00.2"W, IX.1975, 10 m, medium fine sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2422C, 29°30'N 84°27'W, VII.1976, 24 m, medium fine sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2424J, 29°13'00.7"N 85°00'01.4"W, VII.1976, 27 m, medium sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2640A, 29°43'29.3"N 87°54'30.3"W, VI.1975, 35 m, medium sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2640G, 29°43'29.3"N 87°54'30.3"W, VI.1976, 35 m, medium sand	
	G. sp. A	***oxycephala***	Gulf of Mexico MAFLA 2854D, 29°24'00.1"N 85°42'02.0"W, VIII.1977, 42 m, medium fine sand	
	G. sp. A	***oxycephala***	Gulf of Mexico SOFLA St. 4, 26°45.81'N 83°32.12'W, XI.1980, 56 m, medium sand	
	G. sp. A	***oxycephala***	Gulf of Mexico SOFLA St. 28, 24°47.11'N 83°13.08'W, XI.1980, 58 m, fine sand	
	G. sp. A	***oxycephala***	Gulf of Mexico STOCS 4/IV-6, 26°10'N 97°08'W, Sp/1977, 15 m, sand	
	G. sp. A	***oxycephala***	Gulf of Mexico, off Alabama, COE St. 691-5, 30°05.42'N 87°57.50'W, XI.1980, 16.8 m, sand	

author	reported species	actual species	localities	examined material
GILBERT, K.M. (1984a)	*G.* sp. A	***oxycephala***	U.S.A., North Carolina, Beaufort, IV.1965, 10 m, sand and broken shell (14 chaetigers uniramous)	
	G. sp. B	***oxycephala***	Gulf of Mexico MAFLA 2104F, 26°25'00.0"N 83°23'00.8"W, V.1975, 53 m, coarse sand (44 mm, 117 Seg.; 2-3 chaetigers uniramous)	
	G. sp. B	***oxycephala***	Gulf of Mexico SOFLA St. 5D, 26°45.70'N 84°00.13'W, 07.81, 91 m, coarse sand	
HARTMAN, O. (1940)	?*G. oxycephala*	***oxycephala***	R/V VELERO III St. 786-38, Galapagos Islands, NE of Indefatigable Island, 0°30'S 89°55'30"W, 18.I.1938, 392 fms, sand (70 mm, 115 Seg.)	
	?*G. oxycephala*	***oxycephala***	R/V VELERO III St. 887-38, California, NE of Middle Farallon Island, 37°48'N 122°59'W, 7.VIII.1938, 37 fms, sand	
	?*G. oxycephala*	***oxycephala***	R/V VELERO III St. 889-38, California, Monterey Bay, off Point Pinos, 36°38'45"N 121°56'W, 8.VIII.1938, 36 fms, broken shell	
	?*G. oxycephala*	***oxycephala***	R/V VELERO III St. 914-39, California, San Clemente Island, Wilson Cove, 32°46'30"N 118°21'15"W, 19.II.1939, 214 fms, mud	
HARTMAN, O. (1950)	*G. oxycephala*	***oxycephala***	R/V VELERO III St. 1205-40, California, S side of San Nicolas Island, 33°12'40"N 119°29'30"W - 33°12'30"N 119°30'02"W, 24.XI.1940, 24-34 fms, green sand	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1219-40, California, San Nicolas Island, Dutch Harbor, 33°12'45"N 119°28'50"W - 33°12'45"N 119°29'30"W, 12.XII.1940, 15-22 fms, fine sand	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1232-41, California, 5 miles from San Pedro Breakwater, 33°38'15"N 118°12'15"W - 33°38'25"N 118°12'05"W, 15.II.1941, 18-19 fms, coarse sand with dead shells	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1296-41, California, Santa Cruz Island, 1 mile E of Smugglers Cove, 34°01'10"N 119°31'20"W - 34°01'20"N 119°31'20"W, 12.IV.1941, 19-20 fms, rock and kelp	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1330-41, California, Cortes Bank, 4 miles NE of Buoy, 32°29'45"N 119°05'00"W - 32°29'40"N 119°04'30"W, 9.VI.1941, 59-60 fms, sand with broken shells and loose rocks	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1338-41, California, Tanner Bank, 32°42'45"N 119°06'00"W - 32°42'45"N 119°06'00"W, 10.VI.1941, 51-55 fms, black sand with broken shells	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1340-41, California, Tanner Bank, 32°41'00"N 119°06'30"W - 32°41'00"N 119°06'30"W, 10.VI.1941, 37-38 fms, loose rocks	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1341-41, California, Cortes Bank, 4.5 miles NNW of buoy, 32°30'45"N 119°09'30"W - 32°30'30"N 119°09'30"W, 10.VI.1941, 60-61 fms, black sand with rocks	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1342-41, California, Cortes Bank, 9.5 miles NW of buoy, 32°33'15"N 119°15'15"W - 32°33'15"N 119°15'15"W, 10.VI.1941, 50 fms, white sand with rocks	
	G. oxycephala	***oxycephala***	R/V VELERO III St. 1483-42, Oregon, Coos Bay, S of Empire dock, 43°23'02"N 124°17'28"W - 43°23'18"N 124°17'22"W, 21.VII.1942, 2-4 fms, sand with shells	
	G. tenuis	***oxycephala***?	R/V VELERO III St. 1496-42, Oregon, Coos Bay, S Slough, 1 mile beyond bridge, 43°19'26"N 124°19'02"W, 2.VIII.1942, 2-3 fms, coarse sand and shells	
KIRKEGAARD, J.B. (1995)	*G. benguellana*	***oxycephala***?	R/V GALATHEA 1950-2 St. 241, off Kenia, 4°00'S 41°27'E (32 mm)	
MCINTOSH, W.C. (1905)	*G. ehlersi*	***oxycephala***?	Great Britain, 9 miles off Balta, 1868, 80 fms	
	G. ehlersi	***oxycephala***?	Great Britain, St. Magnus Bay, 1867, 80 fms	
	G. ehlersi	***oxycephala***?	HMS KNIGHT ERRANT, Great Britain, 3-4.VIII.1880, 53 fms	
MOHAMMAD, M.B.M. (1973)	*G. capitata benguellana*	***oxycephala***	Arabian Gulf, Salimiyah and Mena Abdullah, intertidal (40-50 mm, 110-140 Seg.)	BMNH 1971.45
O'CONNOR, B. (1985)	*G. oxycephala*	***oxycephala***?	Atlantic, 46°31.2'N 10°24.8'W (25 mm, 120 Seg.)	
	G. oxycephala	***oxycephala***?	Atlantic, 47°36.1'N 8°40.5'W	

author	reported species	actual species	localities	examined material
O'CONNOR, B.D.S. (1987)	*G. oxycephala*	***oxycephala***?	W coast of Scotland, W and S coast of Ireland, North Sea, English Channel, S coast of Brittany, 10-150 m, coarse sand	
TREADWELL, A.L. (1914)	*G.* sp. (?) juv. (?) (= *tenuis* HARTMAN 1950)	***oxycephala***?	U.S.A., California, San Diego Bay, 2-3 fms, coarse yellow sand and broken shells	
USCHAKOV, P.V. & WU, B.-L. (1965)	*G. tenuis*	***oxycephala***?	China, Teng-chow, beach (75 mm)	
	G. tenuis	***oxycephala***?	China, Tsingtao, city pier, lower beach, sand	
BERKELEY, C. (1966)	*G. americana*	***pacifica***?	Canada, W coast Vancouver Island, 1200 fms (60 mm)	
BERKELEY, E. & BERKELEY, C. (1941)	*G. rugosa*	***pacifica***	U.S.A., Corona Del Mar, 0-17 fms	
BERKELEY, E. & BERKELEY, C. (1948)	*G. americana*	***pacifica***?	Canada, British Columbia, Jervis Inlet, littoral	
	G. americana	***pacifica***?	Canada, E coast Vancouver Island, littoral	
	G. americana	***pacifica***?	Canada, W coast Vancouver Island, littoral-30 fms	
FAUCHALD, K. (1972)	*G. americana*	***pacifica***?	R/V VELERO IV St. 1746-49, Gulf of California, 3/4 miles SW of Pta. Arena, Carmen Isl., 25°46'00"N 111°15'00"W - 25°49'40"N 111°15'30"W, 18.III.1949, 95-115 fms, sand with mud and pebble	
FAUVEL, P. (1936b)	*G. opisthobranchiata*	***pacifica***?	Japan, Toshima, banc de sable (95 mm)	
HARTMAN, O. (1944)	*G. americana*	***pacifica***?	U.S.A., California, Tomales Bay, sand mud flats (100-200 mm)	
HARTMAN, O. (1950)	*G. americana*	***pacifica***?	R/V VELERO III St. 943-39, Panama, 3 miles S of Ladrones Island, 7°49'N 82°23'30"W, 54 fms, green mud	
	G. americana	***pacifica***?	R/V VELERO III St. 990-39, California, San Miguel Passage, 33°59'15"N 120°17'30"W - 33°53'45"N 120°18'00"W, 4.VIII.1939, 37-39 fms, shale with mud and sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1003-39, California, N of Santa Rosa Island, Beechers Bay, 34°01'15"N 120°00'30"W - 34°01'45"N 120°00'14"W, 18.VIII.1939, 14 fms, sand and shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1010-39, Mexico, off San Benito Islands, 28°12'05"N 115°33'20"W - 28°12'45"N 115°34'05"W, 20.IX.1939, 92-95 fms, fine green sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1012-39, California, San Clemente Island, S of Pyramid Cove, 32°45'55"N 118°26'10"W, 9.XI.1939, 55-69 fms, sand and shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1020-39, California, San Clemente Island, N of Wilsons Cove, 33°03'10"N 118°40'30"W, 24.XI.1939, 135-150 fms, gray sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1030-40, Mexico, Lower California, off Turtle Bay, 27°39'05"N 114°54'47"W - 27°39'12"N 114°54'12"W, 18.I.1940, 26-31 fms, gray sand with mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1045-40, Mexico, Gulf of California, S shore of Tiburon Island, 28°45'35"N 112°17'45"W, 25.I.1940, shore, rocky shingle	
	G. americana	***pacifica***?	R/V VELERO III St. 1068-40, Mexico, Gulf of California, off Consag Rock, 31°06'30"N 114°28'00"W - 31°06'00"N 114°28'00"W, 1.II.1940, 24-50 fms, brown mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1078-40, Mexico, Sonora, Tepoca Bay, 30°15'37"N 112°52'22"W - 30°15'00"N 112°52'34"W, 4.II.1940, 11-13 fms, sandy mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1121-40, California, E side of San Nicolas Island, 33°20'20"N 119°29'50"W - 33°19'45"N 119°29'05"W, 11.IV.1940, 40-48 fms, sand and shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1123-40, California, S side of San Nicolas Island, 33°15'50"N 119°24'40"W - 33°16'10"N 119°24'30"W, 12.IV.1940, 28-31 fms, rock	
	G. americana	***pacifica***?	R/V VELERO III St. 1126-40, California, off Huntington Beach, 33°36'30"N 118°03'00"W - 33°36'25"N 118°04'00"W, 20.IV.1940, 8-15 fms, fine black sand	

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HARTMAN, O. (1950)	*G. americana*	***pacifica***?	R/V VELERO III St. 1129-40, California, off Newport Beach, 33°35'15"N 117°54'40"W - 33°35'40"N 117°55'25"W, 21.IV.1940, 35-50 fms, mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1130-40, California, off Laguna Beach, 33°32'15"N 117°48'10"W - 33°32'50"N 117°49'00"W, 21.IV.1940, 25-28 fms, sandy mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1131-40, California, off Laguna Beach, 33°30'40"N 117°47'10"W - 33°30'20"N 117°47'30"W, 21.IV.1940, 54-57 fms, mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1133-40, California, off Redondo Beach, 33°49'30"N 118°26'15"W - 33°49'15"N 118°26'30"W, 5.V.1940, 136-172 fms, mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1134-40, California, off Redondo Beach, 33°49'30"N 118°25'15"W - 33°49'20"N 118°24'50"W, 5.V.1940, 16-32 fms, sand and shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1135-40, California, off Redondo Beach, 33°50'20"N 118°24'35"W - 33°50'15"N 118°25'10"W, 5.V.1940, 18-45 fms, coarse sand and gravel	
	G. americana	***pacifica***?	R/V VELERO III St. 1139-40, California, off Redondo Beach, 33°49'30"N 118°23'50"W, 6.V.1940, 11-20 fms, gravel	
	G. americana	***pacifica***?	R/V VELERO III St. 1142-40, California, off Point Vincente Light House, 33°44'10"N 118°24'20"W - 33°43'45"N 118°24'15"W, 6.V.1940, 17-41 fms, coarse sand with mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1143-40, California, off Portuguese Point, 33°44'59"N 118°22'35"W - 33°43'45"N 118°22'20"W, 6.V.1940, 16-20 fms, gray sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1160-40, California, 11.5 miles SE of Long Beach, 33°36'15"N 118°06'45"W - 33°35'40"N 118°05'45"W, 22.VII.1940, 32-52 fms, mud, sand, dead shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1168-40, California, 3.5 miles of Newport Beach, 33°34'15"N 117°58'35"W - 33°34'20"N 117°59'00"W, 9.VIII.1940, 34-37 fms, gray-green mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1191-40, California, S side of Santa Cruz Island, 33°57'40"N 119°37'40"W - 33°57'50"N 119°38'20"W, 30.X.1940, 37-40 fms, gray sand with shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1193-40, California, S side of Santa Cruz Island, Willow Anchorage, 33°57'40"N 119°45'10"W, 30.X.1940, shore	
	G. americana	***pacifica***?	R/V VELERO III St. 1202-40, California, off Point Fermin, 33°41'45"N 118°17'50"W - 33°41'45"N 118°18'00"W, 17.XI.1940, 16-18 fms, gray mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1205-40, California, S side of San Nicolas Island, 33°12'40"N 119°29'30"W - 33°12'30"N 119°30'02"W, 24.XI.1940, 24-34 fms, green sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1207-40, California, 2.25 miles S of San Pedro Breakwater, 33°40'10"N 118°14'10"W - 33°40'30"N 118°14'20"W, 24.XI.1940, 15 fms, sand with pebble and broken shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1210-40, California, La Jolla, 28.XI.1940, shore, rocky	
	G. americana	***pacifica***?	R/V VELERO III St. 1211-40, California, Mission Bay, 29.XI.1940, shore, muddy sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1213-40, California, San Pedro Channel, 70 fathom Bank, 33°24'35"N 117°59'35"W - 33°24'15"N 118°00'35"W, 30.XI.1940, 114-131 fms, rock and pebble	
	G. americana	***pacifica***?	R/V VELERO III St. 1226-41, California, San Pedro Channel, 4.5 miles SW of Balboa, 33°33'20"N 117°56'30"W - 33°33'35"N 117°58'20"W, 26.I.1941, 135-140 fms, fine gray mud	

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HARTMAN, O. (1950)	*G. americana*	***pacifica***?	R/V VELERO III St. 1232-41, California, 5 miles from San Pedro Breakwater, 33° 38'15"N 118°12'15"W - 33°38'25"N 118°12'05"W, 15.II.1941, 18-19 fms, coarse sand with dead shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1235-41, California, 3.5 miles off Huntington Beach, 33°37'40"N 118°04'10"W - 33°37'55"N 118°04'05"W, 16.II.1941, 18 fms, green mud with fine sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1243-41, California, San Diego, 2.75 miles off Point Loma, 32°37'45"N 117°12'35"W - 33°37'50"N 117°12'45"W, 23.II.1941, 9-13 fms, broken shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1254-41, Mexico, Lower California, 8 miles SW of Cedros Island, 28°00'17"N 115°28'43"W - 28°00'00"N 115°29'00"W, 26.II.1941, 63-65 fms, fine green sand with corals	
	G. americana	***pacifica***?	R/V VELERO III St. 1259-41, Mexico, Lower California, 8.5 miles S of Dewey Channel, 27°42'00"N 115°05'15"W - 27°42'15"N 115°05'02"W, 27.II.1941, 49 fms, sand with broken shells and gravel	
	G. americana	***pacifica***?	R/V VELERO III St. 1260-41, Mexico, Dewey Channel, San Eugenio Point, 27°49'32"N 115°06'05"W - 27°49'40"N 115°16'20"W, 27.II.1941, 21-26 fms, coral sand and rocks	
	G. americana	***pacifica***?	R/V VELERO III St. 1264-41, Mexico, Lower California, 1.5 miles off N end of Cedros Island, 28°23'20"N 115°11'52"W - 28°23'20"N 115°11'52"W, 26.II.1941, 55-60 fms, shale and pebble	
	G. americana	***pacifica***?	R/V VELERO III St. 1265-41, Mexico, Lower California, 2 miles SE of Cedros Island Light, 28°20'35"N 115°10'10"W - 28°20'45"N 115°09'45"W, 26.II.1941, 55 fms, green and brown sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1267-41, California, 3 miles NW of Anacapa Island Light, 34°02'30"N 119°24'30"W - 34°02'35"N 119°24'15"W, 16.III.1941, 47 fms, gray-green sand	
	G. americana	***pacifica***?	R/V VELERO III St. 1276-41, California, 10.75 miles W of Point Dume, 34°00'10"N 119°01'20"W - 34°00'15"N 119°01'30"W, 23.III.1941, 47-48 fms, loose rocks	
	G. americana	***pacifica***?	R/V VELERO III St. 1288-41, California, Santa Cruz Island, 5 miles S of Fraser Point, 33°58'20"N 119°55'00"W - 33°57'40"N 119°54'55"W, 11.IV.1941, 74-103 fms, green mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1295-41, California, Santa Cruz Island, 1 mile SE of Smugglers Cove, 34°00'25"N 119°31'30"W - 34°00'35"N 119°31'30"W, 12.IV.1941, 15-21 fms, coral sand and pebble	
	G. americana	***pacifica***?	R/V VELERO III St. 1297-41, California, Santa Cruz Island, 0.5 miles E of San Pedro Point, 34°02'00"N 119°30'35"W - 34°02'15"N 119°30'05"W, 12.IV.1941, 26-40 fms, rocky	
	G. americana	***pacifica***?	R/V VELERO III St. 1300-41, California, Santa Cruz Island, 1.5 miles NW of Cavern Point, 34°04'35"N 119°34'15"W - 34°04'40"N 119°34'30"W, 12.IV.1941, 54-56 fms, mud with sand and dead shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1304-41, California, Santa Cruz Island, 3 miles N of Arch Rock, 34°06'25"N 119°48'40"W - 34°06'20"N 119°48'25"W, 12.IV.1941, 55-60 fms, mud with broken shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1356-41, California, Santa Catalina Island, 0.5 miles E of Abalone Point, 33°20'20"N 118°18'30"W - 33°20'30"N 118°18'30"W, 12.VI.1941, 44-46 fms, mud and kelp	
	G. americana	***pacifica***?	R/V VELERO III St. 1372-41, California, Santa Catalina Island, 0.75 miles E of Empire Landing, 33°25'50"N 118°24'50"W - 33°26'00"N 118°24'50"W, 20.VII.1941, 46-57 fms, fine green sand	

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HARTMAN, O. (1950)	*G. americana*	***pacifica***?	R/V VELERO III St. 1390-41, California, Santa Rosa Island, 4.5 miles SW of E Point, 33°51'30"N 120°05'00"W - 33°51'15"N 119°59'50"W, 26.VIII.1941, 43-45 fms, green mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1412-41, California, San Miguel Island, S of Crook Point, 33°58'40"N 120°21'25"W - 33°58'40"N 120°22'00"W, 16.IX.1941, 41-43 fms, sand and mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1413-41, California, San Miguel Island, 2 miles SW of Cardwell Point, 33°59'55"N 120°19'15"W - 34°00'00"N 120°19'10"W, 16.IX.1941, 34-35 fms, mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1417-41, California, Santa Rosa Island, 4.25 miles NE of Sandy Point, 34°04'05"N 120°13'12"W - 34°04'30"N 120°13'14"W, 16.IX.1941, 35-36 fms, flat rocks	
	G. americana	***pacifica***?	R/V VELERO III St. 1441-41, California, Corona del Mar, 33°35'43"N 117°52'38"W - 33°36'12"N 117°52'56"W, 17.XII.1941, shore, rocks and muddy sand flats	
	G. americana	***pacifica***?	R/V VELERO III St. 1442-41, California, Newport Channel, 33°36'58"N 117°54'12"W - 33°37'12"N 117°53'25"W, 18.XII.1941, shore, sand flats	
	G. americana	***pacifica***?	R/V VELERO III St. 1444-42, California, Newport Bay, S of Lido Island, 33°36'36"N 117°55'16"W - 33°36'35"N 117°55'03"W, 1.II.1942, 3 fms, mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1459-42, California, S of Redondo, Flat Rock Point, 7.XII.1942, shore	
	G. americana	***pacifica***?	R/V VELERO III St. 1463-42, Oregon, Coos Bay, Fossil Point, old submerged jetty, 43°21'23"N 124°18'12"W, 27.VI.1942, shore	
	G. americana	***pacifica***?	R/V VELERO III St. 1468-42, Oregon, Coos Bay, Cape Arago State Park, middle Bay, 43°18'20"N 124°24'08"W, 1.VII.1942, shore, rocks and kelp	
	G. americana	***pacifica***?	R/V VELERO III St. 1472-42, Oregon, N of Winchester Bay, 43°41'26"N 124°14'40"W - 43°46'20"N 124°19'17"W, 2.VII.1942, 26-58 fms, sand with fine mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1476-42, Oregon, Coos Bay, old submerged jetty, 43°21'23"N 124°18'12"W, 12.VII.1942, shore, loose rocks	
	G. americana	***pacifica***?	R/V VELERO III St. 1477-42, Oregon, Agate Beach under Yaquina Head Light, 44°40'35"N 124°04'42"W, 13.VII.1942, shore, rock reef and kelp	
	G. americana	***pacifica***?	R/V VELERO III St. 1490-42, Oregon, Coos Bay, Cape Arago Light House, reef and bight, 43°20'26"N 124°22'24"W, 29.VII.1942, shore, loose rocks and kelp	
	G. americana	***pacifica***?	R/V VELERO III St. 1493-42, Oregon, Coos Bay, Cape Arago State Park, N Beach, 43°19'00"N 124°24'15"W, 31.VII.1942, shore, reefs and loose rocks	
	G. americana	***pacifica***?	R/V VELERO III St. 1494-42, Oregon, Coos Bay, S Slough, beyond bridge 0.5 miles, 43°19'15"N 124°19'13"W, 31.VII.1942, shore, mud and sand flats	
	G. americana	***pacifica***?	R/V VELERO III St. 1496-42, Oregon, Coos Bay, S Slough, 1 mile beyond bridge, 43°19'26"N 124°19'02"W, 2.VIII.1942, 2-3 fms, coarse sand and shells	
	G. americana	***pacifica***?	R/V VELERO III St. 1501-42, Oregon, Coos Bay, Fossil Point, old breakwater jetty, 43°21'23"N 124°18'12"W, 14.VIII.1942, shore, loose rocks and shales	
	G. americana	***pacifica***?	R/V VELERO III St. 1502-42, Oregon, Coos Bay, S Slough, 0.75 miles above bridge, 43°19'33"N 124°19'10"W, 15.VIII.1942, shore, mud	
	G. americana	***pacifica***?	R/V VELERO III St. 1505-43	
	G. americana	***pacifica***?	U.S.A., Washington, Puget Sound	
HILBIG, B. (1994a)	*G. americana*	***pacifica***	U.S.A., Bodega Harbor (350 mm, 300 Seg.)	
	G. americana	***pacifica***	U.S.A., California, off Point San Luis, St. R-1, 35°05.83'N 120°49.16'W, 91 m	
	G. americana	***pacifica***	U.S.A., California, Santa Maria Basin, off Point Arguello, St. 70, 34°29.67'N 120°43.70'W, 200 m, sand mixed with mud, gravel and shell fragments	

author	reported species	actual species	localities	examined material
HILBIG, B. (1994a)	*G. americana*	***pacifica***	U.S.A., Central California, Cayucos	
	G. americana	***pacifica***	U.S.A., Tomales Bay, White Gulch	
	G. americana	***pacifica***	U.S.A., W Santa Barbara Channel, St. 80, 34°22.86'N 120°28.34°W, 196 m	
IZUKA, A. (1912)	*G. opisthobranchiata*	***pacifica***?	Japan, Misaki, tide-marks, sand and mud (235 mm, 290 Seg.)	
	G. opisthobranchiata	***pacifica***?	Japan, Nagai in Prov. Sagami	
	G. opisthobranchiata	***pacifica***?	Japan, Ötsu in Prov. Hitachi	
	G. opisthobranchiata	***pacifica***?	Japan, Tomo Harbour in Prov. Bingo	
MONRO, C.C.A. (1928)	*G. americana*	***pacifica***?	Panama 1914-16, Perlas Islands, off S end of Rey Island, 15 fms, sand (140 mm)	
	G. americana	***pacifica***?	Panama 1914-16, Taboga, low tide, sandy shore	
MONRO, C.C.A. (1933b)	*G. americana*	***pacifica***	S/Y ST. GEORGE, Perlas Islands, E side of St. Elmo Bay, 6-9 fms, sand and shell (200 mm)	BMNH 1932.12.24.115
MOORE, J.P. (1911)	*G. longissima*	***pacifica***	USS ALBATROSS St. 4322, vicinity of San Diego, Point La Jolla Station, S 34° E 3.2 miles 7.III.1904, 110-199 fms, soft green mud with shells [off San Nicolas Island, 31-32 fms, gray sand and shells; error in MOORE, the data matches St. 4422] (af, 305 mm, 230 Seg.)	USNM 17459
	G. rugosa	***pacifica***?	USS ALBATROSS St. 4431, off Santa Rosa Island, 38-45 fms, varied bottom	
	G. rugosa	***pacifica***?	USS ALBATROSS St. 4454, Monterey Bay, off Point Pinos Lighthouse, 65-71 fms, green mud, sand and gravel	
	G. rugosa	***pacifica***?	USS ALBATROSS St. 4548, Monterey Bay, off Point Pinos Lighthouse, 46-54 fms, coarse sand, shells and rock	
OKUDA, S. (1939)	*G. opisthobranchiata*	***pacifica***?	Japan, Okachi Bay, Onagawa Harbour St.: 94, 96, 113, 117	
PETTIBONE, M.H. (1963)	*G. americana*	***pacifica***?	U.S.A., Washington, Puget Sound	
GALLARDO, V. (1968)	*G. alba*	***posterobranchia***?	R/V MAO TIEN St. 40, South Vietnam, Nha Trang, 12 m, sand (cs, 34 mm, 120 Seg.)	
	G. alba	***posterobranchia***?	R/Y STRANGER St. 345, South Vietnam, Nha Trang, 46 m, mud	
	G. posterobranchia	***posterobranchia***	R/Y STRANGER St. 343, South Vietnam, Nha Trang, 44 m, mud (af, 35 mm, 120 Seg.)	
	G. posterobranchia	***posterobranchia***	R/Y STRANGER St. 351, NHA TRANG, 12°08'32"N 109°19'33"E, South Vietnam, 49 m, mud	
	G. posterobranchia	***posterobranchia***	R/Y STRANGER St. 355, NHA TRANG, 12°07'10"N 109°18'40"E, South Vietnam, 48 m, mud	
	G. posterobranchia	***posterobranchia***	R/Y STRANGER St. 361, NHA TRANG, 12°05'42"N 109°19'44"E, South Vietnam, 55 m, mud	
APPY, T.D. et al. (1980)	*G. robusta*	***pseudorobusta***?	Canada, Bay of Fundy, St. 84	
BERKELEY, E. & BERKELEY, C. (1954)	*G. robusta*	***pseudorobusta***?	Canada, Nova Scotia, at Lunenburg	
	G. robusta	***pseudorobusta***?	Canada, Nova Scotia, Sandy Cove, Digby	
DÖRJES, J. (1972)	*G. robusta*	***pseudorobusta***	U.S.A., Georgia, Sapelo Island	SMF
GARDINER, S.L. (1975)	*G. robusta*	***pseudorobusta***	U.S.A., North Carolina, Intracoastal Waterway at Wrightsville Beach and Banks Channel, muddy sand mixed with shells (400 mm) [holo- and paratype]	USNM 52963 + SMF 9450
GILBERT, K.M. (1984a)	*G. robusta*	***pseudorobusta***?	Gulf of Mexico MAFLA 2419H, 29°46'59.8"N 84°05'00.2"W, XI.1977, 10 m, medium fine sand (57 mm, 240 Seg.)	
	G. robusta	***pseudorobusta***?	U.S.A., Gulf of Mexico, Alabama, Mobile Bay, St. 054-A, 30°15'13"N 88°03'08"W, VII.1978, 5 m, silty clay	
HARTMAN, O. (1950)	*G. robusta*	***pseudorobusta***	U.S.A., Florida, ?Lemon Bay	
PETTIBONE, M.H. (1963)	*G. robusta*	***pseudorobusta***?	U.S.A., Gulf of St. Lawrence, Laurentian Channel, 206 fms (800 mm)	

author	reported species	actual species	localities	examined material
PETTIBONE, M.H. (1963)	*G. robusta*	***pseudorobusta***	U.S.A., Maine, Newcastle 1952, Ivan Flye, Boothbay Harbor	USNM 30944
	G. robusta	***pseudorobusta***?	U.S.A., Massachusetts, Georges Bank, 32-37 fms	
	G. robusta	***pseudorobusta***	U.S.A., Massachusetts, Nantucket Sound	USNM 33378, 118372
	G. robusta	***pseudorobusta***	U.S.A., Virginia, Chincoteague Bay area	USNM 30945
BANSE, K. & HOBSON, K.D. (1968)	*G. siphonostoma*	***robusta***	U.S.A., Puget Sound, Washington St. 2, 47°42'16"N 122°26'24"W, 172-210 m, silt	USNM 36590
	G. siphonostoma	***robusta***?	U.S.A., Puget Sound, Washington St. 7, 47°13'30"N 122°49'36"W, 47-84 m, silt	
	G. siphonostoma	***robusta***?	U.S.A., Puget Sound, Washington St. 8, 47°07'24"N 122°50'06"W, 9-21 m, medium sand	
BERKELEY, C. (1966)	*G. robusta*	***robusta***?	Canada, W coast Vancouver Island, 1964, 1200 fms (150 mm)	
BERKELEY, E. & BERKELEY, C. (1942)	*G. robusta*	***robusta***	Canada, Vancouver Island, Estevan Point to Bajo Point to Tatchu Point, littoral	USNM 35956
BERKELEY, E. & BERKELEY, C. (1948)	*G. robusta*	***robusta***?	Canada, Queen Charlotte Islands, littoral	
	G. robusta	***robusta***	Canada, W coast Vancouver Island, littoral	?USNM 35956
BERKELEY, E. & BERKELEY, C. (1960)	*G. robusta*	***robusta***	U.S.A., Gulf of Cailfornia, San Carlos Bay (600 mm)	?USNM 35955
HARTMAN, O. (1940)	*G. longissima*	***robusta***? (HARTMAN 1950)	R/V VELERO III St. 903-38, California, Anaheim Slough, near Long Beach, 33°43'15"N 118°03'45"W, 5.XII.1938, shore, fine sand and mud flats (af, 130 mm)	
	G. robusta	***robusta***?	R/V VELERO III, California, Mission Bay	
HARTMAN, O. (1944)	*G. robusta*	***robusta***?	U.S.A., California, Tomales Bay and Bodega Lagoon, sand flats (150-300 mm)	
HARTMAN, O. (1950)	*G. robusta*	***robusta***	R/V VELERO III St. 903-38, California, Anaheim Slough, near Long Beach, 33°43'15"N 118°03'45"W, 5.XII.1938, shore, fine sand and mud flats	
	G. robusta	***robusta***	R/V VELERO III St. 1160-40, California, 11.5 miles SE of Long Beach, 33°36'15"N 118°06'45"W - 33°35'40"N 118°05'45"W, 22.VII.1940, 32-52 fms, mud, with sand and dead shells	
	G. robusta	***robusta***	R/V VELERO III St. 1267-41, California, 3 miles NW of Anacapa Island Light, 34°02'30"N 119°24'30"W - 34°02'35"N 119°24'15"W, 16.III.1941, 47 fms, gray-green sand	
	G. robusta	***robusta***	R/V VELERO III St. 1292-41, California, Santa Rosa Island, 6 miles E of S Point, 33°53'30"N 120°00'00"W - 33°53'30"N 119°59'40"W, 11.IV.1941, 28-30 fms, rocky	
	G. robusta	***robusta***	R/V VELERO III St. 1417-41, California, Santa Rosa Island, 4.25 miles NE of Sandy Point, 34°04'05"N 120°13'12"W - 34°04'30"N 120°13'14"W, 16.IX.1941, 35-36 fms, flat rocks	
	G. robusta	***robusta***	R/V VELERO III St. 1441-41, California, Corona del Mar, 33°35'43"N 117°52'38"W - 33°36'12"N 117°52'56"W, 17.XII.1941, shore, rocks and muddy sand flats	
	G. robusta	***robusta***	R/V VELERO III St. 1442-41, California, Newport Channel, 33°36'58"N 117°54'12"W - 33°37'12"N 117°53'25"W, 18.XII.1941, shore, sand flats	
	G. robusta	***robusta***	R/V VELERO III St. 1450-42, California, Corona del Mar, Newport Harbor, 33°36'04"N 117°52'48"W, 1.VI.1942, shore	
	G. robusta	***robusta***	R/V VELERO III St. 1451-42, California, Corona del Mar, Newport Harbor, 33°36'04"N 117°52'48"W, 2.VI.1942, shore, rocks and sand flats	
	G. robusta	***robusta***	R/V VELERO III St. 1463-42, Oregon, Coos Bay, Fossil Point, old submerged jetty, 43°21'23"N 124°18'12"W, 27.VI.1942, shore	
	G. robusta	***robusta***	R/V VELERO III St. 1468-42, Oregon, Coos Bay, Cape Arago State Park, middle Bay, 43°18'20"N 124°24'08"W, 1.VII.1942, shore, rocks and kelp	

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HARTMAN, O. (1950)	*G. robusta*	***robusta***	R/V VELERO III St. 1476-42, Oregon, Coos Bay, old submerged jetty, 43°21'23"N 124°18'12"W, 12.VII.1942, shore, loose rocks	
	G. robusta	***robusta***	R/V VELERO III St. 1477-42, Oregon, Agate Beach under Yaquina Head Light, 44°40'35"N 124°04'42"W, 13.VII.1942, shore, rock reef and kelp	
	G. robusta	***robusta***	R/V VELERO III St. 1487-42, Oregon, Coos Bay, Cape Arago State Park, middle Bay, 43°18'20"N 124°24'08"W, 26.VII.1942, shore, loose rocks and kelp	
	G. robusta	***robusta***	R/V VELERO III St. 1488-42, Oregon, Coos Bay, off Cape Arago Light, Squaw Island, 43°20'19"N 124°22'35"W, 27.VII.1942, shore, rocky reef and kelp	
	G. robusta	***robusta***	R/V VELERO III St. 1489-42, Oregon, Coos Bay, Cape Arago State Park, N Bay, 43°19'00"N 124°24'15"W, 28.VII.1942, shore, loose rocks with shale reef and kelp	
	G. robusta	***robusta***	R/V VELERO III St. 1490-42, Oregon, Coos Bay, Cape Arago Light House, reef and bight, 43°20'26"N 124°22'24"W, 29.VII.1942, shore, loose rocks and kelp	
	G. robusta	***robusta***	R/V VELERO III St. 1493-42, Oregon, Coos Bay, Cape Arago State Park, N Beach, 43°19'00"N 124°24'15"W, 31.VII.1942, shore, reefs and loose rocks	
	G. robusta	***robusta***	R/V VELERO III St. 1494-42, Oregon, Coos Bay, S Slough, beyond bridge 0.5 miles, 43°19'15"N 124°19'13"W, 31.VII.1942, shore, mud and sand flats	
	G. robusta	***robusta***	R/V VELERO III St. 1502-42, Oregon, Coos Bay, S Slough, 0.75 miles above bridge, 43°19'33"N 124°19'10"W, 15.VIII.1942, shore, mud	
	G. robusta	***robusta***	R/V VELERO III St. 1505-43	
	G. robusta	***robusta***	U.S.A., many others from Tomales and San Francisco Bays	
HILBIG, B. (1994a)	*G. robusta*	***robusta***	U.S.A., California, Santa Maria Basin, off Point Sal, St. 104, 34°59.45'N 120°56.49'W, 294 m, gravelly sand (800 mm)	
	G. robusta	***robusta***	U.S.A., California, Tomales Bay, N of Stemple Creek	
IZUKA, A. (1912)	*G. robusta*	***robusta***?	Japan, Sagami Bay (420 mm, 280 Seg.)	
	G. robusta	***robusta***	USS ALBATROSS, Japan, Suruga Bay, 65 fms	USNM 5337
MOORE, J.P. (1903)	*G. robusta*	***robusta***	USS ALBATROSS St. 3718, Suruga Bay, 1900, 65 fms (Colony of dichotomously branched ciliates between the parapodia)	USNM 5337
PETTIBONE, M.H. (1963)	*G. robusta*	***robusta***?	Canada, British Columbia, Barclay Sound	
	G. robusta	***robusta***	U.S.A., Washington, West side San Juan Island	USNM 30946
AUGENER, H. (1927c)	*G. americana*	***russa***	New Zealand, Tauranga, 2-4 Fd.	ZMB 6666 [partim]
KNOX, G.A. (1960a)	*G. lamelliformis*	***russa***?	New Zealand, Chatham I. Exp. 1954 St. 28, Petre Bay, 43°57'S 176°47'W, 45 fms, rock	
	G. lamelliformis	***russa***?	New Zealand, Chatham I. Exp. 1954 St. 32, Waitangi, 7 fms, fine gray sand	
	G. lamelliformis	***russa***?	New Zealand, Chatham I. Exp. 1954 St. 40, SE of Pitt Island, 44°32'S 176°05'W, 155 fms, fine green sand (65 mm, 166 Seg.)	
	G. lamelliformis	***russa***?	New Zealand, Chatham I. Exp. 1954 St. 44, N 30°E of Kaingaroa, 44°35'S 176°03.5'W, 120-125 fms, fine green sand mud	
KNOX, G.A. (1960b)	*G. lamelliformis*	***russa***?	New Zealand, Chatham I. Exp. 1954 St. 4, 43°14'S 176°11'W, 200 fms (230 mm)	
	G. lamelliformis	***russa***?	New Zealand, Chatham I. Exp. 1954 St. 41, SE of Pitt Island, 44°35.5'S 176°04'W, 330 fms	
	G. lamelliformis	***russa***?	New Zealand, Dunedin Harbour	
	G. lamelliformis	***russa***?	New Zealand, Petone Beach, 6.VIII.1949	
	G. lamelliformis	***russa***?	New Zealand, Whale Island, VIII.1957, 10 fms	
	G. lamelliformis	***russa***?	NZOI St. A 327, Milford Sound, 28.I.1957, 62 fms	
	G. lamelliformis	***russa***?	R/V GALATHEA St. 615, Milford Sound, 19.I.1952, 293 m	
	G. lamelliformis	***russa***?	R/V GALATHEA St. 618, Milford Sound, 19.I.1952, 139 m	

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KNOX, G.A. (1960b)	*G. lamelliformis*	***russa***?	R/V KOTUKU St. 10, Hawkes Bay, 39°26'S 177°03'E, 21.V.1952, 15 fms	
	G. lamelliformis	***russa***?	R/V KOTUKU St. 13, 39°26'30"S 176°54'E, 21.V.1952, 8 fms	
	G. lamelliformis	***russa***?	R/V KOTUKU St. 14, 39°27'S 176°53'30"E, 21.V.1952, 5 fms	
MCINTOSH, W.C. (1885)	*G. lamelliformis*	***russa***	HMS CHALLENGER St. 174C, S of Fiji Islands, 19°7'S 178°19'E, 3.VIII.1874, 610 fms, coral mud (af, 45 mm)	BMNH 1885.12.1.243
AUGENER, H. (1927a)	*G. siphonostoma* (= *gigantea*)	***sagittariae***	Papua New Guinea, Bismarck Archipelago, Ralun, 3.IX.1896, from seaweed (140 mm)	ZMB 2963
	G. siphonostoma (= *gigantea*)	***sagittariae***	Papua New Guinea, Bismarck Archipelago, Ralun, 4.IV.1897, from sand reef	ZMB 6559
GIBBS, P.E. (1971)	*G. gigantea*	***sagittariae***?	A/K MARORO, Solomon Islands, New Georgia Group, Vangunu Island, Marovo Lagoon St. 229, 10.XI.1965, 5 m, sand	
	G. gigantea	***sagittariae***?	Solomon Islands, Florida Islands, Nggela (or Florida) Island, 5-10.7. and 24-29.VII.1965, littoral, silty mud and sand	
	G. gigantea	***sagittariae***	Solomon Islands, Florida Islands, Tetel Island, 5-10.7. and 24-29.VII.1965, littoral, silty mud and sand	BMNH 1970.410
	G. gigantea	***sagittariae***?	Solomon Islands, Gizo Island (New Manra), 4-5.IX.1965, littoral, silty mud and sand	
	G. gigantea	***sagittariae***	Solomon Islands, Guadalcanal, Fintry Point, 17.IX.-10.X.1965, littoral, silty mud and sand	BMNH 1970.418, 1970.419 [partim]
	G. gigantea	***sagittariae***	Solomon Islands, Guadalcanal, Graham Point, 17.IX.-10.X.1965, littoral, silty mud and sand	BMNH 1970.417
	G. gigantea	***sagittariae***?	Solomon Islands, Guadalcanal, Komimbo Bay, 18-20.VII. and 16-21.VIII.1965, littoral, silty mud and sand	
	G. gigantea	***sagittariae***?	Solomon Islands, Guadalcanal, Maraunibina Island, 17.IX.-10.X.1965, littoral, silty mud and sand	
AMOUREUX, L. et al. (1978)	*G. longipinnis*	***sphyrabrancha***?	Egypt, Sinai, Gulf of Elat, 250 m (60 mm)	
AUGENER, H. (1925a)	*G. sphyrabrancha*	***sphyrabrancha***	Papua New Guinea, New-Pommern, SW coast, Liebliche Islands, 26.-31.I.1909, shallow water (cs, 190 mm, 390 Seg.; subepitokous)	
AUGENER, H. (1927b)	*G. sphyrabrancha*	***sphyrabrancha***?	Curacao, Spaansche Haven, reef	
DAY, J.H. (1960)	*G. longipinnis*	***sphyrabrancha***	South Africa, Cape Coast, False Bay St. FAL.211, 34°07.1'S 18°35.6'E, 9.IX.1953, 21.7 m, sand with shells and rocks	SAM A20470
DAY, J.H. (1967)	*G. longipinnis*	***sphyrabrancha***	South Africa, Cape Province, 34°S 18°E, 1-99 m (100 mm) [see DAY 1960]	
EHLERS, E. (1920)	*G. longipinnis*	***sphyrabrancha***?	Indonesia, Amboina, VII.-IX.1885, littoral	
FAUVEL, P. (1932)	*G. longipinnis*	***sphyrabrancha***?	HMS INVESTIGATOR St. 168, Bay of Bengal, 13°11'48"N 80°34'40"E, 14.II.1894, 105 fms, brown mud	
	G. longipinnis	***sphyrabrancha***	HMS INVESTIGATOR St. 292, Persian Gulf, 53 fms	BMNH 1938.5.7.43-44
GARDINER, S.L. (1975)	*G. sphyrabrancha*	***sphyrabrancha***	U.S.A., Georgia, off Sapelo Island, 12 miles 73° from sea buoy, 48 ft.	USNM 33382
	G. sphyrabrancha	***sphyrabrancha***	R/V FISH HAWK St. 7121, Florida, Tampa Bay, 1901 (75 mm)	USNM 29166
GIBBS, P.E. (1971)	*G. longipinnis*	***sphyrabrancha***	Solomon Islands, Guadalcanal, Komimbo Bay, 18-20.7. and 16-21.VIII.1965, low water mark, muddy silt	BMNH 1970.448
GILBERT, K.M. (1984a)	*G. sphyrabrancha*	***sphyrabrancha***?	Gulf of Mexico MAFLA 2528B, 29°54'58.6"N 86°04'58.5"W, VI.1975, 37 m, coarse sand (af, 56 mm, 115 Seg.)	
	G. sphyrabrancha	***sphyrabrancha***?	Gulf of Mexico MAFLA 2528E, 29°54'58.6"N 86°04'58.5"W, VIII.1977, 37 m, coarse sand	
	G. sphyrabrancha	***sphyrabrancha***?	Gulf of Mexico MAFLA 2640, 29°43'29.3"N 87°54'30.3"W, VII.1976, 35 m, medium sand	
	G. sphyrabrancha	***sphyrabrancha***	Gulf of Mexico MAFLA 2853E, 29°18'01.9"N 84°19'59.0"W, VIII.1977, 29 m, coarse sand	USNM 89761

author	reported species	actual species	localities	examined material
MONRO, C.C.A. (1939a)	?*G. longipinnis*	***sphyrabrancha***	M/Y ROSAURA St. 31, Mosquito Bank, off Gorda Cay, 15°54'N 82°13'W, 34 m	BMNH 1941.1.1.2 63
NONATO, E.F. & LUNA, J.A.C. (1970)	*G. longipinnis*	***sphyrabrancha***?	R/V AKAROA St. 8, NE Brazil, 21-100 m (68 mm)	
	G. longipinnis	***sphyrabrancha***?	R/V AKAROA St. 82, NE Brazil	
	G. longipinnis	***sphyrabrancha***?	R/V AKAROA St. 86, NE Brazil	
	G. longipinnis	***sphyrabrancha***?	R/V AKAROA St. 94, NE Brazil	
	G. longipinnis	***sphyrabrancha***?	R/V AKAROA St. 103, NE Brazil	
	G. longipinnis	***sphyrabrancha***?	R/V AKAROA St. 104, NE Brazil	
	G. longipinnis	***sphyrabrancha***?	R/V CANOPUS St. 137, NE Brazil	
USCHAKOV, P.V. & WU, B.-L. (1962)	*G. sagittariae*	***sphyrabrancha***?	China, Futszyan and Chazhtsyan, 6.VII.1958	
AUGENER, H. (1927a)	*G. tessellata*	***tesselata***	Papua New Guinea, Bismarck Archipelago, Ralun, 24.XI.1896 (af, 14 mm)	ZMB 6560
EHLERS, E. (1868)	*G. tesselata*	***tesselata***?	Italy, Quarnero: Lesina and Curzola; Martinsizza near Fiume (25 mm, 85 Seg.)	
FAUVEL, P. (1957)	*G. tesselata*	***tesselata***	Gulf of Akaba St. E 49/4, XII.1949	HUJ [partim]
GALLARDO, V. (1968)	*G. tesselata*	***tesselata***?	R/V MAO TIEN St. 337, South Vietnam, Nha Trang, 15 m, brown coarse sand (cs, 35 mm, 120 Seg.)	
HARTMAN, O. (1950)	*G. tesselata*	***tesselata***?	R/V VELERO III St. 936-39, Costa Rica, Port Parker, 10°57'35"N 85°49'W, 25.III.1939, 5-10 fms, sandy mud	
	G. tesselata	***tesselata***?	R/V VELERO III St. 948-39, Panama, Bahia Honda, off Medidor Island, 7°43'55"N 81°35'48"W, 28.III.1939, 30-35 fms, rock and mud	
	G. tesselata	***tesselata***?	R/V VELERO III St. 984-39, California, 5.5 miles S of Santa Barbara, 33°22'30"N 119°03'45"W - 33°22'28"N 119°02'50"W, 30.V.1939, 39-48 fms, large rocks	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1016-39, California, San Clemente Island, off Wilsons Cove, 33°01'10"N 118°32'10"W, 23.XI.1939, 60-135 fms, sponges	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1019-39, California, N of San Clemente Island, 33°04'40"N 118°42'00"W, 24.XI.1939, 250-300 fms, sand and mud	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1023-39, California, San Clemente Island, S of Pyramid Cove, 32°47'00"N 118°23'00"W, 25.XI.1939, 55-110 fms, fine gray sand	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1027-39, California, 5 miles SE of Santa Catalina Island, 33°15'15"N 118°14'00"W, 10.XII.1939, 140-150 fms, green mud	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1028-39, California, 0.5 miles E of Santa Catalina Island, 33°18'25"N 118°15'30"W, 10.XII.1939, 83-125 fms, mud and rocks	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1035-40, Mexico, Gulf of California, Inner Gorda Bank, 23°02'00"N 109°30'15"W - 23°01'15"N 109°30'35"W, 20.I.1940, 70-78 fms, coral sand	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1056-40, Mexico, Gulf of California, between Angel de la Guardia and Mejia Islands, 29°32'47"N 113°35'27"W, 28.I.1940, 6-11 fms, sand and coral	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1136-40, California, off Redondo Beach, 33°48'25"N 118°30'20"W - 33°47'45"N 118°29'50"W, 5.V.1940, 70-240 fms, green mud	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1151-40, California, SE of Santa Catalina Island, 33°16'15"N 118°14'45"W - 33°15'55"N 118°13'50"W, 5.VII.1940, 117-128 fms, rock and sand	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1178-40, California, N of Santa Catalina Island, off Eagle Bank, 33°30'45"N 118°30'40"W - 33°27'40"N 118°30'00"W, 10.IX.1940, 40-43 fms, gray sand	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1181-40, California, N of Santa Catalina Island, Howlands Landing, 33°28'08"N 118°28'20"W - 33°29'02"N 118°32'40"W, 10.IX.1940, 47-64 fms, coarse sand with broken shells	

author	reported species	actual species	localities	examined material
HARTMAN, O. (1950)	*G. tesselata*	***tesselata***?	R/V VELERO III St. 1196-40, California, S side of Santa Cruz Island, off Gull Island, 33°55'50"N 119°48'50"W - 33°56'10"N 119°49'20"W, 31.X.1940, 110-140 fms, rock	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1213-40, California, San Pedro Channel, 70 fathom Bank, 33°24'35"N 117°59'35"W - 33°24'15"N 118°00'35"W, 30.XI.1940, 114-131 fms, rock and pebble	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1245-41, Mexico, Lower California, 4 miles off Todos Santos Island, 31°53'20"N 116°48'15"W - 31°53'20"N 116°48'15"W, 24.II.1941, 41 fms, shells with mud and gray sand	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1306-41, California, Santa Catalina Island, 7 miles E of Long Point, 33°24'40"N 118°13'35"W - 33°25'00"N 118°14'30"W, 3.V.1941, 228-267 fms, rock and black sand	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1317-41; California, Santa Catalina Island, 3.2 miles S of Ben Weston Point, 33°18'05"N 118°29'30"W - 33°18'35"N 118°29'25"W, 17.V.1941, 115-175 fms, loose rocks and gravel	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1334-41, California, Cortes Bank, 4.75 miles SE of buoy, 32°24'00"N 119°02'30"W - 32°23'45"N 119°02'30"W, 9.VI.1941, 125-131 fms, sand	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1343-41, California, Cortes Bank, 9.5 miles NNW of buoy, 32°35'00"N 119°11'45"W - 32°35'00"N 119°11'55"W, 10.VI.1941, 90-110 fms, fine green sand with gravel	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1349-41, California, Santa Catalina Island, 4 miles SE of Church Rock, 33°16'00"N 118°15'00"W - 33°15'45"N 118°15'00"W, 12.VI.1941, 109-116 fms, sand with loose rocks	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1350-41, California, Santa Catalina Island, 5 miles SE of Church Rock, 33°16'00"N 118°13'30"W - 33°16'00"N 118°13'45"W, 12.VI.1941, 117-118 fms, sand with loose rocks	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1381-41, California, Santa Catalina Island, 0.5 miles off White Cove, 33°23'30"N 118°22'04"W - 33°23'30"N 118°22'02"W, 9.VIII.1941, 33-37 fms, kelp and rocks	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1383-41, California, Santa Catalina Island, E of Long Point, 33°23'40"N 118°20'04"W - 33°24'02"N 118°21'22"W, 10.VIII.1941, 45-50 fms, sponges with lamp shells	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1392-41, California, Santa Rosa Island, 6.5 miles SE of S Point, 33°49'10"N 120°55'00"W - 33°48'55"N 120°54'45"W, 26.VIII.1941, 57 fms, rocks and green mud	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1393-41, California, Santa Rosa Island, 10 miles SE of S Point, 33°46'30"N 119°58'30"W - 33°46'30"N 119°58'30"W, 26.VIII.1941, 107-125 fms, mud with rocks and gravel	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1400-41, California, Santa Catalina Island, 6.25 miles NE of Long Point, 33°24'15"N 118°13'30"W - 33°25'20"N 118°14'40"W, 8.IX.1941, 228-267 fms, rocks	
	G. tesselata	***tesselata***?	R/V VELERO III St. 1408-41, California, Santa Catalina Island, 8 miles E of Long Point, 33°24'45"N 118°13'30"W - 33°25'40"N 118°12'20"W, 14.IX.1941, 228-300 fms, small rocks and sand	
HARTMAN, O. (1966)	*G. tesselata*	***tesselata***?	U.S.A., Hawaii, Maui and Molokai Islands, 78-253 fms (30 mm)	
HILBIG, B. (1994a)	*G. tesselata*	***tesselata***?	U.S.A., California, Santa Maria Basin, off Point Estero, St. 1, 35°27.86'N 121°05.33'W, 98 m, sandy bottoms (27 mm, 100 Seg.)	
	G. tesselata	***tesselata***?	U.S.A., California, Santa Maria Basin, off Point Estero, St. 2, 35°27.70'N 121°06.52'W, 200 m	
IBARZÁBAL, D. (1986)	*G. tesselata*	***tesselata***?	Cuba, Isla de la Juventud, Punta del Este	

author	reported species	actual species	localities	examined material
MOORE, J.P. (1908)	*G. nana*	***tesselata***	USS ALBATROSS St. 4193, B.C., Gulf of Georgia, Halibut Bank, 1903, 18-23 fms, green mud and fine sand	USNM 5605
	G. tesselata	***tesselata***	USS ALBATROSS St. 4197, B.C., Gulf of Georgia, Halibut Bank, 1903, 31-90 fms, sticky green mud and fine sand	USNM 5610
MOORE, J.P. (1911)	*G. tesselata*	***tesselata***?	USS ALBATROSS St. 4326, vicinity of San Diego, La Jolla, off Soledad Hill, 243-264 fms, soft green mud	
	G. tesselata	***tesselata***	USS ALBATROSS St. 4399, 32°44.50'N 117°48.45'W, 264-285 fms, fine gray sand and rock	USNM 16934
	G. tesselata	***tesselata***?	USS ALBATROSS St. 4410, off Santa Catalina Island, 143-245 fms, gray sand, shells, gravel and rocks	
	G. tesselata	***tesselata***	USS ALBATROSS St. 4415, off Santa Barbara Island, 302-638 fms, green mud	USNM 16939
	G. tesselata	***tesselata***	USS ALBATROSS St. 4418, off Santa Barbara Island, 238-310 fms, dark green mud, sand and rock	USNM 16983
	G. tesselata	***tesselata***	USS ALBATROSS St. 4430, off Santa Cruz Island, 197-281 fms, black sand, pebble and rock	USNM 17308
	G. tesselata	***tesselata***?	USS ALBATROSS St. 4431, off Santa Rosa Island, 38-45 fms, varied bottom	
	G. tesselata	***tesselata***	USS ALBATROSS St. 4463, Monterey Bay, off Point Pinos Lighthouse, 48-111 fms, rocky	USNM 17307
O'CONNOR, B. (1985)	*G. tesselata*	***tesselata***?	Atlantic, 21°45'S 11°07.8'E (25 mm, 120 Seg.)	
O'CONNOR, B.D.S. (1987)	*G. tesselata*	***tesselata***?	W coast of Ireland, Mediterranean Sea, >300 m, muddy sand; Med. from *Posidonia*	
TREADWELL, A.L. (1906)	*G. sagittariae*	***tesselata***? (HARTMAN 1950)	USS ALBATROSS St. 3823, Hawaiian Islands, 1902, 78-222 fms, fine sand and pebble	
	G. sagittariæ	***tesselata***? (HARTMAN 1950)	USS ALBATROSS St. 4083, Hawaiian Islands, 1902, 238-253 fms, gray sand	
TREADWELL, A.L. (1914)	*G. nana*	***tesselata***? (HARTMAN 1950)	St. 1541, off San Clemente Island, 136-500 fms, green mud	
DÖRJES, J. (1971)	*G. convoluta*	***tridactyla***	Italy, Gulf of Gaeta	SMF
EHLERS, E. (1868)	*G. convoluta*	***tridactyla***?	Italy, Naples; France, St. Malo (65 mm, 135 Seg.)	
FAUVEL, P. (1932)	*G. alba*	***tridactyla***?	India, Cochin Backwater, near Ernakulam	
	G. alba	***tridactyla***?	HMS INVESTIGATOR St. 90, Ganjam Coast, 8 miles ESE of Kalingapatam Light, 17-21.II.1890, 28-30 fms, sand and shell	
	G. alba	***tridactyla***	Portugese India, Mormugao Bay	ZSI W 1868/1
GRAVIER, C. (1906)	*G. africana*	***tridactyla***?	Red Sea, Djibouti, Récif Bonhoure, 1897 (40 mm, 120 Seg.)	
JOHNSTON, G. (1865)	*G. alba*	***tridactyla***	Wales, Aberystwith	BMNH unreg.
	G. alba	***tridactyla***	England, Cornwall, Polperro	BMNH 1862.5.5.2 /4
LEE, J.H. (1984)	*G. convoluta*	***tridactyla***?	Yellow Sea St. 402, 704, 1003, 1304, VIII.1982, 20-50 m, sand or clayey sand (25 mm, 55 Seg.)	
O'CONNOR, B.D.S. (1987)	*G. tridactyla*	***tridactyla***?	W and S coast of Ireland, Irish Sea, English Channel, W coast of France, Mediterranean Sea, 0-48 m, muddy sand	
QUATREFAGES, A. DE (1866)	*G. dubia*	***tridactyla***	France, Bréhat (120-130 Seg.)	MNHN A119 partim
ARWIDSSON, I. (1899)	*G. goësi*	***unicornis***?	Norway, Christianiafjord, 130 m	
	G. goësi	***unicornis***?	Norway, Iddefjord, 10 m	
	G. goësi	***unicornis***?	Norway, Kilsund and Sörfjord, 100 m	
BELLAN, G. (1964)	*G. unicornis*	***unicornis***?	R/V CALYPSO St. 1531, Canal de Talente, 38°40'5"N 23°06'6"E, 17.5-17.VI.1960, 27 m, schlammiger Sand	
	G. unicornis	***unicornis***?	R/V CALYPSO St. 1562, Pointe Kissalo, 17.5-17.VI.1960, 55 m, Schlamm	
DAY, J.H. (1957)	*G. unicornis*	***unicornis***?	Moçambique, Inhaca Island	
DAY, J.H. (1960)	*G. unicornis*	***unicornis***	R/V AFRICANA II St. 935, South Africa, Cape Coast, 34°23.8'S 18°41.1'E, 12.III.1948, 88 m	SAM A20478 [partim]
	G. unicornis	***unicornis***?	South Africa, Cape Coast St. TRA.27, 34°48'S 20°20'E, 21.VII.1948, 67 m, sand and mud	

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DAY, J.H. (1960)	*G. unicornis*	***unicornis***?	South Africa, Cape Coast St. TRA.91, 33°51'S 25°50'E, 15.VII.1953, 46 m, mud	
	G. unicornis	***unicornis***?	South Africa, Cape Coast, Algoa Bay St. LIZ.24, 34°00.4'S 25°44.5'E, 11.IV.1954, 39 m, coarse sand with shells	
	G. unicornis	***unicornis***?	South Africa, Cape Coast, False Bay St. FAL.117, Simons Bay, 12.II.1953, 23.5 m	
	G. unicornis	***unicornis***?	South Africa, Cape Coast, False Bay St. FAL.229, 34°20.3'S 18°31.8'E, 9.IX.1953, 64 m, sand	
	G. unicornis	***unicornis***?	South Africa, Cape Coast, False Bay St. FAL.341, 34°11'S 18°35.5'E, 31.I.1959, 44 m, fine brown sand	
	G. unicornis	***unicornis***?	South Africa, Cape Coast, False Bay St. FB.323, 34°10'S 18°29.5'E, 30.I.1947, 30 m, fine sand	
	G. unicornis	***unicornis***?	South Africa, Cape Coast, South Coast St. SCD.18, 32°52'S 28°12.5'E, 20.IV.1958, 78 m, clayey mud	
DAY, J.H. (1967)	*G. unicornis*	***unicornis***?	Moçambique, 26°S 32°E, intertidal (350 mm)	
	G. unicornis	***unicornis***	South Africa, Cape 32°S 28°E - 34°S 18°E, 0-99 m [see DAY 1960]	
DÖRJES, J. (1971)	*G. rouxi*	***unicornis***	Italy, Gulf of Gaeta	SMF
	G. unicornis	***unicornis***	Italy, Gulf of Gaeta	SMF
EHLERS, E. (1868)	*G. unicornis*	***unicornis***?	Italy, Fiume and Porto di Lazaretto, mud and sand (27 mm, 124 Seg.)	
EHLERS, E. (1908)	*G. kraussi*	***unicornis***	R/V VALDIVIA 1898-99 St. 242, beyond Dar-es-Salam, 6°34'S 39°35'O, 404 m, Pteropoda mud	ZMB 4521
FAUVEL, P. (1913)	*G. rouxii*	***unicornis***?	R/V MELITA, Gulf of Bone, 22 m	
	G. rouxii	***unicornis***?	St. 0357, Monaco	
FAUVEL, P. (1913 and 1914)	*G. rouxii*	***unicornis***	St. 1106, Devant Cannes, 43°28'N 7°02'45"W, 21.V.1901, 712 m	MNHN A416
	G. rouxii	***unicornis***?	St. 2964, Gulf of Gascogne, 46°17'30"N 5°45'W, 20.VII.1910, 4380 m	
FAUVEL, P. (1934)	*G. Rouxii*	***unicornis***?	Croatia, Istria, Rovigno St. 1, 3, 12, 14, 44, 61, 72, 75, 78, 85, 88, 101, 112, 116, 125; Canal di Leme St. 15, 18, 25, 43, 52	
	G. unicornis	***unicornis***?	Croatia, Istria, Rovigno St. 2, 8, 49, 103, 108	
FAUVEL, P. (1936a)	*G. unicornis*	***unicornis***?	R/V VANNEAU, Marocco St. 67, 9°49'20"W 30°34'10"N, 21.VIII.1925, 55 m	
	G. unicornis	***unicornis***?	R/V VANNEAU, Marocco St. 68, 9°48'30"W 30°34'40"N, 22.VIII.1925, 43 m	
FAUVEL, P. (1937)	*G. unicornis*	***unicornis***?	Egypt, Alexandria 1933 St. 9, 11, 12, 17, 63, 114, 141, 145, 3-85 brasses, sand and mud	
GRUBE, A.E. (1855)	*G. Meckelii*	***unicornis***?	Italy, Trieste (live observations) and Villa Franca (5 Zoll, 250 Seg.)	
GRUBE, E. (1870a)	*G. Meckelii*	***unicornis***	Portugal, Lissabon (110 mm, 175 Seg.)	
	G. Meckelii	***unicornis***?	Italy, Trieste (110 mm, 175 Seg.)	
MARENZELLER, E. VON (1904)	*G. rouxii*	***unicornis***?	R/V TAURUS, S of Samos, 37°37'N 26°58'E, 22.VIII.1893, 92 m, yellow-gray mud with a few sand	
O'CONNOR, B.D.S. (1987)	*G. rouxi*	***unicornis***?	W coast of Sweden, North Sea, W coast of Scotland, S and W coast of Ireland, W coast of France, W coast of Spain, Mediterranean Sea, Atlantic coast of Marocco, 10-300 m, sandy mud and muddy sand	
	G. unicornis	***unicornis***?	W coast of France, W coast of Spain, Atlantic coast of Marocco, 10-200 m, sandy mud	
RULLIER, F. (1965a)	*G. rouxii*	***unicornis***	Dahomey, St. 113, 6°12'N 2°26'E, 8.X.1963, 48 m, mud (45 mm)	MNHN A476
	G. rouxii	***unicornis***	Dahomey, St. 28, 6°11'N 2°12'E, 3.X.1963, 40 m, muddy sand (40 mm)	MNHN A476
	G. rouxii	***unicornis***	Togo, St. 56, 6°4'N 1°46'E, 4.X.1963, 60 m, sandy mud (30 mm)	MNHN A476
	G. rouxii	***unicornis***	Togo, St. 95, 6°N 1°18'E, 6.X.1963, 45 m, sandy mud (50 mm)	MNHN A476
	G. unicornis	***unicornis***	Dahomey, St. 112, 6°10'N 2°17'E, 8.X.1963, 50 m, mud (70 mm)	MNHN A476
RULLIER, F. & AMOUREUX, L. (1968)	*G. unicornis*	***unicornis***?	R/V ALBATROS St. 187, Gulf of Tarente	

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STØP-BOWITZ, C. (1941)	*G. Rouxii*	***unicornis***?	Norway, several stations	
TEBBLE, N. (1959)	*G. tesselata*	***unicornis***	Israel, off Nabi Rubin St. 798, 20.VIII.1949, 90 m	HUJ
VOIT, M. (1911)	*G. Goësi*	***unicornis***?	R/V POSEIDON St. 22, 55°43'N 6°20'E, III.1905, 47 m (af, 96 mm, 168 Seg.)	
	G. Goësi	***unicornis***?	R/V POSEIDON St. 25, 54°34'N 4°41'E, III.1903, 51 m	
	G. Goësi	***unicornis***?	R/V POSEIDON St. 41, 57°46'N 11°10'E, III.1903, 40 m	
	G. Goësi	***unicornis***?	R/V POSEIDON St. 42, 57°52'N 10°30'E, III.1903	
	G. Goësi	***unicornis***?	R/V POSEIDON St. 49, 55°14'N 6°22'E, III.1903, 49 m	
	G. Goësi	***unicornis***?	R/V POSEIDON St. K 3, 56°15'N 11°30'E, V.1910, 24 m	
	G. Goësi	***unicornis***?	R/V POSEIDON St. K 8, 57°35'N 11°10'E, V.1910, 42 m	
WESENBERG-LUND, E. (1939)	*G. Rouxii*	***unicornis***?	Gulf of Tunis, Salammbô, 9 m (cs, 45 mm)	
Glycerella				
AMOUREUX, L. (1982)	*G. atlantica*	***magellanica***?	THALASSA 1973 Bretagne-SW Ireland St. Z451, 48°39'3"N 10°36'5"W, 1400 m, mud (20-48 Seg.)	
DETINOVA, N.N. (1985)	*G. magellanica*	***magellanica***?	R/V ACADEMIC MSTISLAV KELDYSH St. 272, 58°31'5"N 31°39'4"W - 58°31'5"N 31°40'3"W, 1605-1635 m (5 mm)	
	G. magellanica	***magellanica***?	R/V ACADEMIC MSTISLAV KELDYSH St. 444, 58°20'8"N 31°36'5"W - 58°20'7"N 31°36'0"W, 1635-1535 m	
	G. magellanica	***magellanica***?	R/V ACADEMIC MSTISLAV KELDYSH St. 464, 58°21'1"N 31°36'9"W - 58°21'0"N 31°35'6"W, 1670-1750 m	
	G. magellanica	***magellanica***?	R/V ACADEMIC MSTISLAV KELDYSH St. 477, 58°25'6"N 31°49'9"W - 58°49'9"N 31°49'4"W, 1805-1660 m	
FAUVEL, P. (1913 and 1914)	*G. magellanica*	***magellanica***?	St. 229, Azores, 38°22'N 28°14'24"W, 16.VIII.1888, 736 m (15 mm)	
	G. magellanica	***magellanica***?	St. 234, E of Graciosa, 39°01'40"N 27°55'25"W, 19.VIII.1888, 454 m, gravel	
	G. magellanica	***magellanica***	St. 584, Azores, 38°30'30"N 26°50'15"W, 16.VII.1895, 845 m, rock	MNHN A416
	G. magellanica	***magellanica***?	St. 2211, Azores, 37°29'N 31°22'30"W, 1.IX.1905, 1229 m, mud with volcanic sand and stones	
HARTMAN, O. (1967)	*G. magellanica*	***magellanica***	USNS ELTANIN St. 1345, 54°50-51'S 129°48-46'W, 7.XI.1964, 915-1153 m (35 mm, 82 Seg.)	USNM 55957
Hemipodia				
BERKELEY, E. & BERKELEY, C. (1941)	*H. borealis*	***californiensis***	U.S.A., California, Santa Cruz Island, intertidal	?USNM 35985 [partim]
BERKELEY, E. & BERKELEY, C. (1958)	*H. californiensis*	***californiensis***	Mexico, Lower California, Ensenada, sandy beach	USNM 35979
HARTMAN, O. (1938)	*H. californiensis*	***californiensis***	U.S.A., California, Balboa Bay, Elkhorn Slough, sandy mud flats	
HARTMANN-SCHRÖDER, G. (1962b)	*H. pectinans*	***californiensis***?	Peru, Anconcillo, S part of Bahia de Chimbote, groundwater, 23.IV.1956, beach, gravel and coarse sand	
ORENSANZ, J.M. & GIANUCA, N.M. (1974)	*H. olivieri*	***californiensis***?	Argentina, Golfo San Matías, campanha exploratória "SAO-III/72" St.: 1117, 1121, 1133 (Punta Mejillón, Bahía Greek, Bahía Rosas)	
	H. olivieri	***californiensis***?	Argentina, Paso de Piedras, Claromecó, X.1952	
	H. olivieri	***californiensis***?	Argentina, Praia de Villa Gesell "in vivo" (210 mm, 197 Seg.)	
	H. olivieri	***californiensis***?	Argentina, Praia de Mar de Ajó, 12.X.1950	
	H. olivieri	***californiensis***?	Argentina, Praia do balneário "El Reta", 5.XII.1953	
	H. olivieri	***californiensis***?	Argentina, Praias da Província de Buenos Aires, campanha para avaliacao dos efetivos de "Marisco branco", Olivier St.: 16, 21, 22, 48, 61, 62, 67, Monte Hermoso	
	H. olivieri	***californiensis***?	?, Praia do Balneário "Pehuen-co", XI.1968	
	H. olivieri	***californiensis***?	Brazil, Praia do Cassino (RS) (cs, 115 mm, 115 Seg.)	
	H. olivieri	***californiensis***?	Uruguai, Praia de Cabo Polonia, 26.X.1971	
	H. olivieri	***californiensis***?	Uruguai, Praia do Chuí, 28.X.1970	
	H. olivieri	***californiensis***?	Uruguai, Praia do Chuí, 29.X.1970	
	H. olivieri	***californiensis***?	Uruguai, Praia próxima à albufera de Rocha, 24.X.1971	

author	reported species	actual species	localities	examined material
FAUCHALD, K. (1973)	*H. armatus*	***pustatula***?	Colombia, Boca Grande Cartagena, 10°30'N 75°40'W, 28.IV.1971	
	H. armatus	***pustatula***?	Costa Rica, Cahuita South, 9°44'N 82°50'W, 1.IV.1971	
	H. armatus	***pustatula***?	Costa Rica, Puerto Viejo, 9°40'N 82°44'W, 2.IV.1971	
	H. armatus	***pustatula***?	Costa Rica, Samara, 9°53'N 85°38'W, 8.IV.1971	
	H. armatus	***pustatula***?	Costa Rica, Tamarindo, 10°19'N 85°50'W, 9.IV.1971	
HARTMANN-SCHRÖDER, G. (1965)	*H. longipapillatus*	***pustatula***?	Chile St. 1, Punta Tortuga near Coquimbo, 29°57.4'S 71°22.9'W, 21.II.1960, 82 m, fine sand with mud and many detritus	
BERKELEY, E. & BERKELEY, C. (1941)	*H. borealis*	***simplex***	U.S.A., California, Santa Cruz Island, intertidal	?USNM 35985 [partim]
DAY, J.H. (1973b)	*H. roseus*	***simplex***?	U.S.A., North Carolina, Beaufort, 3-20 m (38 mm, 100 Seg.)	
EHLERS, E. (1901)	*H. patagonica*	***simplex***?	Chile, Calbuco, beach, sand	
	H. patagonica	***simplex***?	Chile, Coquimbo, coast under stones	
	H. patagonica	***simplex***	Chile, Punta Arenas	ZMB 3639
	H. patagonica	***simplex***?	Chile, Talcahuano, Tumbes	
FAUVEL, P. (1941)	*H. simplex*	***simplex***?	Chile, Punta Arenas	
	H. simplex	***simplex***	R/V LA ROMANCHE Mission du Cap Horn 1882-83, Orange Bay, shore, under stones	MNHN A122
GARDINER, S.L. (1975)	*H. roseus*	***simplex***	U.S.A., North Carolina, Cape Lookout (62 mm)	USNM 52952
	H. roseus	***simplex***?	U.S.A., North Carolina, off Beaufort, 34°36'N 76°30'W, 5 m, fine to coarse sand	
HARTMAN, O. (1940)	*H. simplex*	***simplex***?	R/V VELERO III St. 366-35, Peru, Callao, S of Lorenzo Island, 12°06'55"S 77°12'05"W, 10.I.1935, 8 fms, between rocks (90 mm, 150 Seg.)	
	H. simplex	***simplex***?	R/V VELERO III St. 375-35, Peru, Independencia Bay, Lee side of Viejas Island, 14°14'S 76°12'40"W, 13.I.1935, shore, sand	
	H. simplex	***simplex***?	R/V VELERO III St. 846-38, Peru, Sechura Bay, 5°27'30"S 81°01'W, 15.II.1938, 6 fms, sand and fine broken shell	
	H. borealis	***simplex***?	R/V VELERO III St. 910-39, California, Portuguese Bend, 33°44'20"N 118°22'20"W, 12.II.1939, shore, rock and reefs	
	H. borealis	***simplex***?	R/V VELERO III, California, Mission Bay	
HARTMAN, O. (1948)	*H. borealis*	***simplex***?	U.S.A., Alaska Sitka, VIII.1932	
	H. borealis	***simplex***?	U.S.A., Alaska, Crab Bay, summer 1932	
HARTMANN-SCHRÖDER, G. (1962a)	*H. heteropapillatus*	***simplex***?	Chile, Ramuncho near Concepción, 21.X.1960, beach, medium sand to gravel	
HARTMANN-SCHRÖDER, G. (1965)	*H. heteropapillatus*	***simplex***?	Chile St. 109, Metalqui, 42°16.5'S 74°15'W, 18.III.1960, 44 m, fine sand with algae and worm tubes	
	H. heteropapillatus	***simplex***?	Chile St. 68, Punta Lavapie, 37°08.7'S 73°38.6'W, 10.III.1960, 58 m, fine sand with stones and dead algae	
	H. heteropapillatus	***simplex***?	Chile, Bahia Inglés, 41°48'S 73°53'W, 18.III.1960, 12 m, mud with sand	
HARTMANN-SCHRÖDER, G. (1991)	*H. heteropapillatus*	***simplex***?	Chile, Bahia Quillaipe, 5.I.1989, lower eulittoral, sand (52 mm)	
HILBIG, B. (1994a)	*H. borealis*	***simplex***?	U.S.A., California, Tomales Bay, sand and sand mud	
KNOX, G.A. (1960b)	*H. digitifera*	***simplex***?	New Zealand, Queen Charlotte Sound, bay near end of Snout, 30.VIII.1932, 4 fms (45 mm)	
	H. simplex	***simplex***?	New Zealand, Banks Peninsula, Taylor's Mistake, V.1949, intertidal	
	H. simplex	***simplex***?	New Zealand, Christchurch, Heathcote estuary	
	H. simplex	***simplex***?	New Zealand, Moeraki, intertidal	
	H. simplex	***simplex***?	New Zealand, Stewart Island, Paterson Inlet, I.1951, 3 fms	
EHLERS, E. (1904)	*H. simplex*	***yenourensis***?	New Zealand, N end Cook Strait, French Pass	
HUTCHINGS, P. & MURRAY, A. (1984)	*G. tridactyla*	***yenourensis***	Australia, Victoria, Venus Bay, 20.II.1981 (120 mm, 150 Seg.)	AM W18617
IZUKA, A. (1912)	*H. yenourensis*	***yenourensis***?	Japan, Prov. Suruga, Gulf of Yenoura, Nagahama, 8.I.1898 [syntypes]	
	H. yenourensis	***yenourensis***?	Japan, Prov. Aki, Ujina [syntypes]	
OKUDA, S. (1939)	*H. borealis*	***yenourensis***?	Japan, Ishihama (70-110 mm)	

Abbreviations of the museums and institutions

AM	Australian Museum, Sydney (Australia)
AMNH	American Museum of Natural History, New York City (U.S.A.)
ANSP	Academy of Natural Sciences, Philadelphia (U.S.A.)
BMNH	Natural History Museum, London (England)
CBM	Natural History Museum and Institute, Chiba (Japan)
CM	Canterbury Museum, Christchurch (New Zealand)
HUJ	Hebrew University of Jerusalem (Israel)
HZM	Zoologisches Institut und Zoologisches Museum der Universität Hamburg (Germany)
IOUSP	Instituto Oceanográfico da Universidade de São Paulo (Brazil)
KORDI	Korea Ocean Research & Development Institute (South Korea)
LACM	Los Angeles Country Museum of Natural History, contains the ALLAN HANCOCK Foundation collection (AHF) (U.S.A.)
MACNBR	Museo Argentino de Ciencias Naturales "Bernadino Rivadavia" (Argentinia)
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge (U.S.A.)
MNCN	Museo Nacional de Ciencias Naturales, Madrid (Spain)
MNHN	Muséum National d'Histoire Naturelle, Paris (France)
MPUW	Muzeum Przyrodnicze Uniwersytet Wroclawski (Poland)
MSU	Biological Faculty of the Lomonosov Moscow State University (Russia)
MV	Museum of Victoria, Melbourne (Australia)
NHMW	Naturhistorisches Museum Wien (Austria)
NMI	National Museum of Ireland, Dublin (Irland)
NNM	Nationaal Natuurhistorisch Museum, Leiden (The Netherlands)
NSM	National Science Museum, Tokyo (Japan)
NZOI	National Institute of Water & Atmospheric Research; formerly: New Zealand Oceanographic Institute, Wellington (New Zealand)
SAM	South African Museum, Cape Town (South Africa)
SMF	Senckenbergmuseum, Frankfurt am Main (Germany)
SSM	Swedish State Museum of Natural History, Stockholm (Sweden)
STZN	Università degli Studi di Napoli Federico II (Italy)
UC	Università di Catania (Italy)
UCC	Universidad de Concepción, Estacion de Biologia Marina Dichato (Chile)
UCO	Université Catholique de l'Ouest, Angers (France)
UMUT	University Museum (and Misaki Marine Biological Station) of the University of Tokyo (Japan)
UNAM	Universidad Nacional Autónoma de México (Mexico)
UNICAMP	Museu de Historia Natural, Instituto de Biologia, Universidade Estadual de Campinas (Brazil)
USNM	United States National Museum, National Museum of Natural History (Smithsonian Institution), Washington D.C. (U.S.A.)
UUZM	Uppsala Universitet, Zoologiska Museet (Sweden)
WAM	Western Australian Museum, Perth (Australia)
ZISP	Zoological Institute, Russian Academy of Sciences, St. Petersburg (Russia)
ZMA	Zoölogisch Museum, Universiteit van Amsterdam (The Netherlands)
ZMB	Museum für Naturkunde der Humboldt-Universität zu Berlin (Germany)
ZMMSU	Zoological Museum of Lomonosov Moscow State University (Russia)
ZMUC	Zoologisk Museum, Copenhagen (Denmark)
ZPAL	Institute of Paleobiology, Polish Academy of Sciences, Warszawa (Poland)
ZSI	Zoological Survey of India, Calcutta (India)

Abbreviations in the text

af	anterior fragment
cs	complete specimen
fig.	figure
fms	fathoms (1 fm = 1.83 m)
M	monotypy
mf	median fragment
nr.	number
OD	original designation
p.	page
pers. com.	personal communication
pers. obs.	personal observation
pf	posterior fragment
pl.	plate
SD	secondary designation
Seg.	segments
SEM	scanning electron microscopy
sp.	species
St.	station
syn.	synonym

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