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Description of seven new species of the genus *Glycera* Savigny, 1818 (Annelida: Polychaeta: Glyceridae)

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DESCRIPTION OF SEVEN NEW SPECIES OF THE GENUS *GLYCERA* SAVIGNY, 1818 (ANNELIDA: POLYCHAETA: GLYCERIDAE)

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ABSTRACT

As part of a world-wide revision of the family Glyceridae Grube, 1850, seven new species of the genus *Glycera* Savigny, 1818 are described, i. e., *Glycera bassensis* n. sp. from Australia, *G. benhami* n. sp. from New Zealand and the Tasman Sea, *G. gilbertae* n. sp. from the Gulf of Mexico, *G. guatemalensis* n.sp. from the Pacific coast of Central America, *G. madagascariensis* n. sp. from Madagascar, *G. prosobranchia* n. sp. from both sides of the Isthmus of Panama and the Pacific coast of Central America, and *G. pseudorobusta* n. sp. from the east coast of North America. A list of the valid species together with their synonyms and an identification key for all species of *Glycera* are presented.

INTRODUCTION

The family Glyceridae was formally established by Grube (1850) as *Glycera* including the two genera *Glycera* and *Goniada*. Kinberg (1865) pointed out distinguishing characters between glycerids and goniadids and established the separate family Goniadidae (as Goniadea). Today the family Glyceridae consists of three genera: *Glycera* Savigny, 1818, *Glycerella* Arwidsson, 1899, and *Hemipodia* Kinberg, 1865. The three genera show clear differences in several diagnostic characters. Species of the genus *Hemipodia* have only uniramous parapodia, with compound chaetae and rodlike 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 rodlike, while they are more or less triangular or deeply incised in the genus *Glycera*.

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).

Typical characters, making confusion with other families impossible are: the elongated body with numerous segments, tapering gradually towards both ends; the long, conical prostomium with four short appendages at the tip; the eversible, long and muscular proboscis, being densely covered with numerous papillae; and the four dark, hook-like curved jaws, each associated with a rodlike to triangular or deeply incised aileron.

The main diagnostic characters for species identification are: 1) the shape and number of pre- and postchaetal lobes, 2) the presence or absence of branchiae and their position on the parapodia, 3) the mode of segmental annulation (bi- or triannulate), 4) the shape of the aileron, and 5) the structure of the proboscidal papillae, which occur in different types with regard to their shape, size, and the morphology of their posterior side. Earlier investigations showed that the anterior and posterior side of the papillae are shaped differently, and only the posterior sides have specialized structures (Fiege & Böggemann 1997).

In the scope of a worldwide revision of the Glyceridae seven new species were found and are described herein. A list of the valid species together with their synonyms and an identification key for all species of *Glycera* known to this date are presented.

SYSTEMATIC SECTION

Genus *Glycera* Savigny, 1818

Type species: *Glycera unicornis* Savigny, 1818.

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 conical, pointed, distinctly annulated; anteriormost annulus with four appendages; 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 with four dark, hook-like curved jaws and associated ailerons, each aileron with a more or less triangular or deeply incised base. Usually first two parapodia uniramous, mostly consisting of neuropodia, ventral cirri and compound chaetae only; following parapodia biramous, with dorsal and ventral cirri; largest parapodia in mid-body region; 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. 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.

Glycera bassensis n. sp.

Figs. 1, 8a-b, 10

Material examined.

Type material. – HMAS KIMBLA Cruise 80-K-5 St. 76, Australia, Victoria, Western Bass Strait, 39°18.8'S 143°38'E, 10 Oct 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 Oct 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 Nov 1981, 85 m, sandy shell; paratype: cs/97/191/5.0/3.7 (SMF 9118).

Additional material. – HMAS KIMBLA Cruise 80-K-5 St. 57, Western Bass Strait, 39°06.3'S 143°21.1'E, 8 Oct 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 Nov 1981, 51 m, shell; af/24/71/2.2/1.7; af/20/60/2.7/1.8 (MV F 80213 partim).

Diagnosis. – Proboscical papillae mainly digitiform with about 10-17 ridges; ailerons with pointed triangular base; 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 bearing parapodia and dorsal cirri, slightly longer than posterior annulus. Long, conical prostomium consisting of about 20-24 rings (Fig. 1a). 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. 1b, 8a-b). Ailerons with pointed triangular base (Fig. 1c). First two parapodia uniramous; following parapodia biramous (Fig. 1d-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. 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 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. – Only known from Bass Strait; 51-106 m (Fig. 10).

Etymology. – The name refers to the type locality, the Bass Strait, separating Australia and Tasmania.

Remarks. – *Glycera russa* Grube, 1870, a species also occurring on the Australian coasts, agrees in some characters with *G. bassensis*. Both species show almost identical proboscical papillae and parapodial structures. The pro-

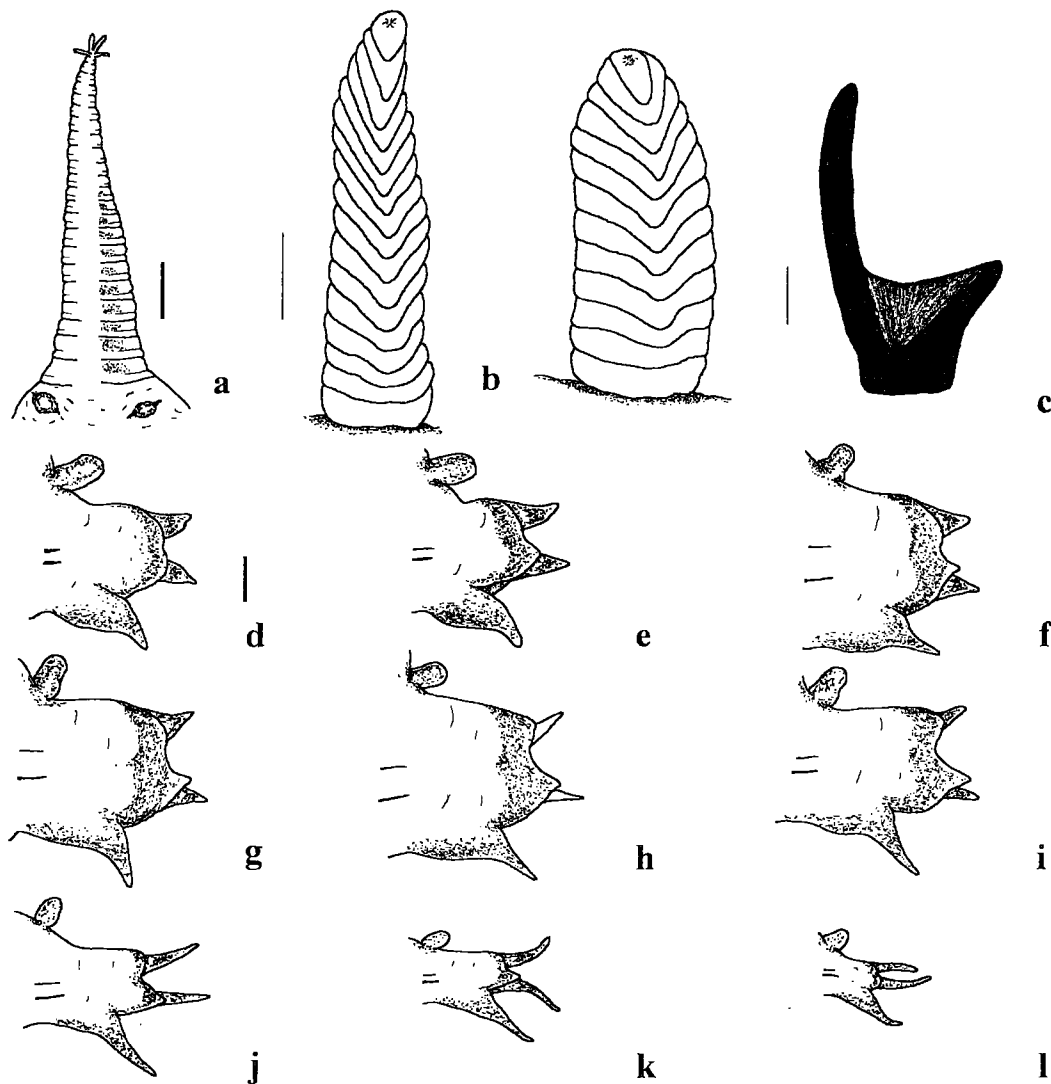


Fig. 1. *Glycera bassensis* n. sp. - a, Prostomium; b, Proboscis; c, Aileron; d, Anterior parapodium; e-k, Parapodia from mid-body; i, Posterior parapodium (b, d-l, posterior view; d-l, chaetae not shown; a, MV F 80207, paratype, b-l, P.G. MV F 80203, holotype; scale bars, a = 0.5 mm, b = 0.02 mm, c-l = 0.2 mm).

stomium of *G. russa* is slightly shorter and consists only of about 10-12 rings, and the ailerons have a triangular base. Moreover, *G. russa* has simple, retractile, digitiform branchiae, which are situated dorsally on the posterior side at the base of parapodia, in contrast to *G. bassensis* where branchiae are absent.

Glycera benhami n. sp.

Figs. 2, 8c-d, 10

Glycera tessellata - Benham 1916: 143; pl. 47, figs. 23-25 (non Grube, 1863)

Material examined.

Type material. - New Zealand, Cook Strait, 41°07.4'S 174°39.5'E, 4 Oct 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 Dec 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. – R/V TANGAROA Cruise 81-T-1 St. 170/8, Australia, Victoria, Eastern Bass Strait, 38°52.6'S 148°25.2'E, 15 Nov 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 Nov 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 Nov 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 Nov 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 Nov 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 Feb 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) – R/V ENDEAVOUR, Tasmania, off Maria Island, 143 m; af/39/67/4.4/2.8 (AM E6308) – New Zealand, 33°59'S 172°21'E, 22 Sep 1958, 81-135 m; cs/22/81/2.2/1.5 (NZOI B93) – 34°00'S 172°15'E, 11 Apr 1965, 158 m; cs/15/77/1.8/1.2; cs/13/66/2.0/1.3 (NZOI E323) – 41°03.2'S 174°21.5'E, 7 Dec 1983, 78-93 m; cs/25/86/2.0/1.4 (NZOI T478 partim) – 41°16.5'-16.0'S 174°29.7'-29.6'E, 5 Oct 1958, 256 m; af/29/85/2.2/1.1 (NZOI A444) – 41°40.01'S 170°39.8'E, 10 Sep 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) – 42°23.75'-23.88'S 173°51.32'-51.80'E, 13 Dec 1982, 60-100 m; cs/30/78/4.3/2.6 (NZOI U254 partim) – 42°26.33'S 173°47.4'E, 15 Dec 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 Dec 1982, 100 m; af/29/79/3.4/2.5 (NZOI U261DR) – 42°26.45'S 173°43.90'E, 10 Dec 1982, 64 m; cs/22/77/2.3/1.6 (NZOI U243) – 42°26.55'S 173°41.87'E, 20 Dec 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 Dec 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 Dec 1982, 90 m; cs/17/76/2.1/1.7 (NZOI U281 partim) – 42°27.95'S 173°39.80'E, 21 Dec 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 Dec 1982, 98-95 m; cs/9/53/1.3/0.7 (SMF 9435) – 42°29.38'S 173°38.16'E, 9 Dec 1982, 1020-1140 m;

af/22/45/3.2/2.0 (NZOI U242 partim) – c. 42°38.05'S 173°39.65'E, 11 Dec 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 Dec 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 Dec 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 Mar 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 Sep 1989, 330 m; cs/12/69/1.8/1.1 (NZOI V382 DAB partim) – 43°16.5'S 177°10.5'E, 11 Oct 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 Sep 1963, 253 m; af/15/68/1.4/1.0 (NZOI A892) – 43°22.4'S 173°21.9'E, 31 Oct 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 Oct 1979, 322 m; cs/10/82/2.3/1.7 (NZOI S127) – 43°53.4'S 173°54.2'E, 30 Oct 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 Sep 1963, 203 m; cs/4/38/0.5/0.3 (NZOI A917) – 44°14.1'S 176°56.7'W, 23 Mar 1978, 325 m; cs/48/101/3.9/2.8 (NZOI Q32) – 45°38.8'S 166°53.3'E, 8 Nov 1978, 0-40 m; cs/9/62/1.2/0.8; cs/6/50/1.0/0.7 (NZOI Q102A) – 45°43'S 171°05'E, 20 Jan 1970, 145 m; cs/47/114/5.8/4.5; cs/44/118/6.7/5.0 (NZOI G679) – 46°57.5'S 167°32.5'E, 26 Aug 1963, 104 m; cs/10/74/1.8/1.1 (NZOI A896) – 48°00'S 168°32'E, 17 Jan 1965, 134 m; cs/22/88/3.6/2.7 (NZOI F97 partim) – 48°32'S 167°09'E, 13 Jan 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 Mar 1981, 95 m; af/20/58/5.7/4.0 (NZOI T40) – 52°52'S 169°49'E, 31 Jan 1965, 168 m; cs/26/110/3.0/2.2 (NZOI F142).

Diagnosis. – Proboscoidal papillae mainly digitiform with single, terminal, U-shaped and straight, median, longitudinal ridge; ailerons with deeply incised base; 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 bearing parapodia and dorsal cirri, about as long as posterior annulus or slightly longer. Conical prostomium consisting of about 8-10 rings (Fig. 2a). 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 (both types sometimes with small sub-terminal swellings; Fig. 8c, white arrow); 3. isolated, slightly shorter and broader, conical papillae with straight, median, longitudinal ridge (Figs. 2b, 8c-d). Ailerons with deeply incised base (Fig. 2c). First two parapodia uniramous; following parapodia biramous (Fig. 2d-l). Two slender triangular to digitiform

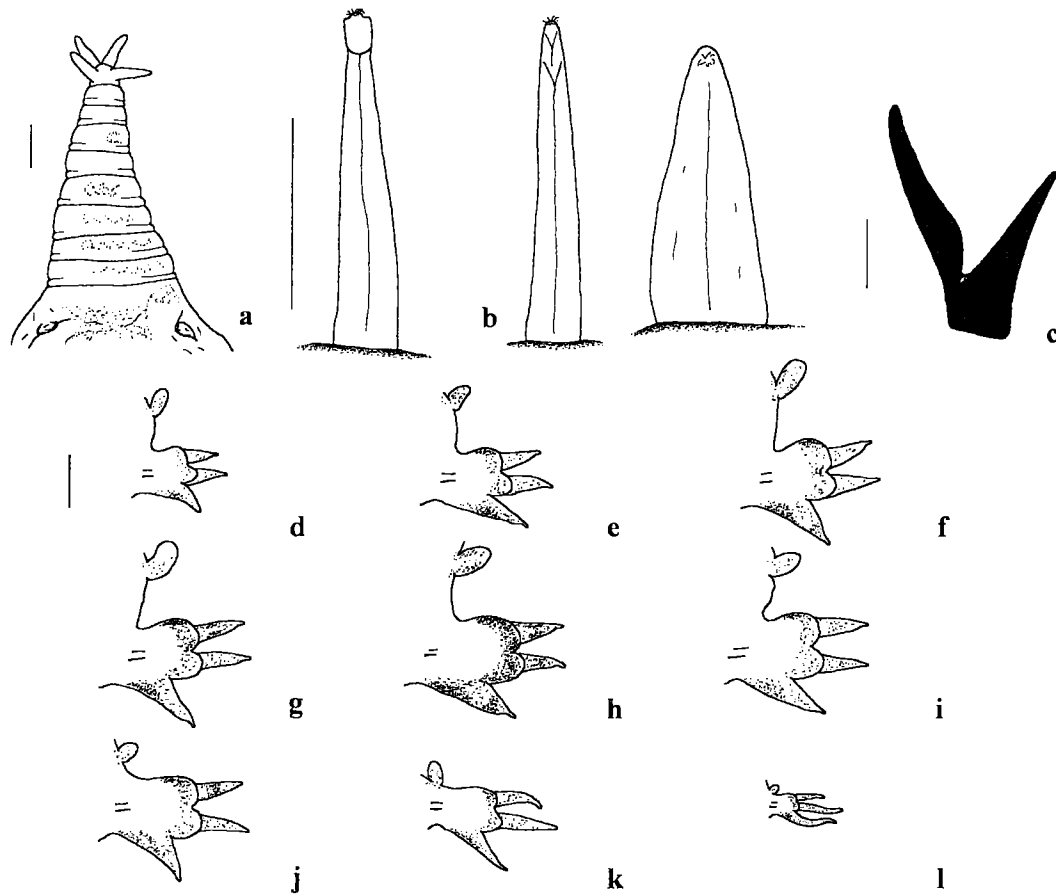


Fig. 2. *Glycera benhami* n. sp. - a, Prostomium; b, Proboscical papillae; c, Aileron; d, Anterior parapodium; e-k, Parapodia from mid-body; l, Posterior parapodium (b, d-l, posterior view; d-l, chaetae not shown; a-l, NZOI A441, holotype; scale bars, a, c-l = 0.2 mm, b = 0.1 mm).

prechaetal lobes of about same length; anteriorly both with small digitate distal process; becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial. 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.

Distribution. - Tasman Sea and coasts of New Zealand; 27-1140 m (Fig. 10).

Etymology. - This species is named after William Blaxland Benham, who first described the typical proboscical papillae of this species (Benham 1916), but considered these specimens to belong to *Glycera tessellata* Grube, 1863.

Remarks. - Together with *Glycera brevicirris* Grube, 1870 and *G. tessellata* Grube, 1863, *G. benhami* belongs to a small group of glycerids characterized by ailerons with a deeply incised base, parapodia with short, rounded postchaetal lobes, mostly digitiform proboscical papillae, and the absence of branchiae. In contrast to *G. benhami*, which has digitiform papillae with one straight, median, longitudinal and an additional terminal, U-shaped ridge, the digitiform papillae of *G. tessellata* show only a straight, median, longitudinal ridge, while in *G.*

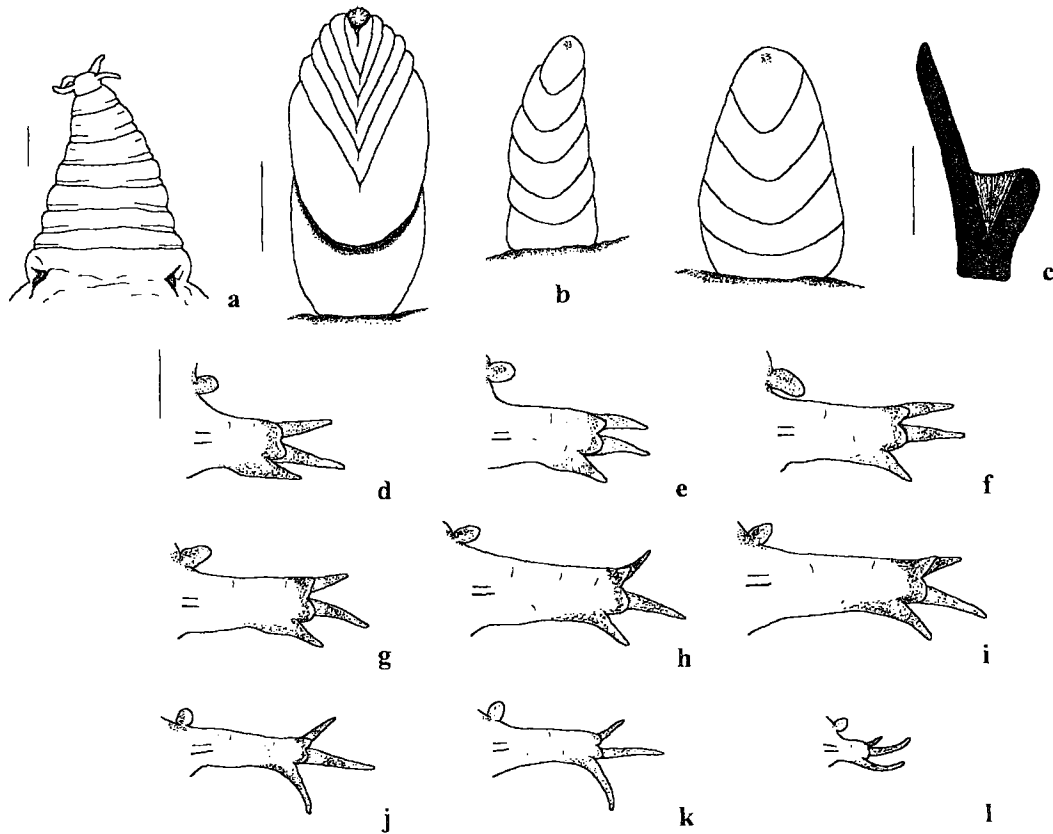


Fig. 3. *Glycera gilbertae* n. sp. - a, Prostomium; b, Proboscical papillae; c, Aileron; d, Anterior parapodium; e-k, Parapodia from mid-body; l, Posterior parapodium (b, d-l, posterior view; d-l, chaetae not shown; a, c, USNM 89789, holotype; b, USNM 89784; d-l, USNM 89786, paratype; scale bars, a, c-l = 0.2 mm, b = 0.02 mm).

brevicirris about 6-20 ridges are present, which are U-shaped basally and V-shaped apically.

***Glycera gilbertae* n. sp.**

Figs. 3, 8e-f, 10

Glycera sp. E Gilbert 1984: 20; figs. 17, 18a-g

Material examined.

Type material. - U.S.A., 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. - U.S.A., off Mississippi, MAFLA St. 2638, 29°55'29"N 88°33'28"W, Nov 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, May 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 Mar 1990, 17 m; af/24/76/5.2/3.2 (UNAM PO-41-009).

Diagnosis. - Proboscical papillae mainly with terminal fingernail structure with short stalk and 4-6 V-shaped, terminal ridges on nail; ailerons with triangular base; 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 bearing parapodia and dorsal cirri, about as long as posterior annulus or slightly longer. Conical prostomium consisting of about 9–10 rings (Fig. 3a). 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. 3b, 8e–f). Ailerons with triangular base (Fig. 3c). First two parapodia uniramous; following parapodia biramous (Fig. 3d–l). Two slender triangular to digitiform prechaetal lobes, neuropodial lobe always slightly longer than notopodial; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe distinctly shorter than neuropodial. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe slender triangular and longer than rounded neuropodial lobe; in posteriormost parapodia notopodial lobe 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. 10).

Etymology. – This species is named after Katherine M. Gilbert, who first gave a detailed description of it as *Glycera* sp. E.

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

Glycera guatemalensis n. sp.

Figs. 4, 8g–h, 10

Glycera lancadivae – Berkeley & Berkeley 1939: 334; (non Schmarda, 1861)

Material examined.

Type material. – R/YSTRANGER, Guatemala, San José, 4 Jan 1937, 18.3 m; 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 base; parapodia of mid-body with long notopodial and shorter neuropodial prechaetal lobes and two shorter, rounded postchaetal lobes; branchiae absent.

Description. – Body up to 99 mm long with up to 138 segments. Mid-body segments biannulate; anterior annulus bearing parapodia and dorsal cirri, about as long as posterior annulus or slightly longer. Conical prostomium consisting of about 10–12 rings (Fig. 4a). 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. 4b, 8g–h). Ailerons with deeply incised base, outer ramus on inner side slightly pointed (Fig. 4c). First two parapodia uniramous; following parapodia biramous (Fig. 4d–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; structure in posterior parapodia unknown, due to incompleteness of specimens. Two shorter, rounded postchaetal lobes; neuropodial lobe often slightly longer than notopodial. 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 (Pacific coast); 18.3 m (Fig. 10).

Etymology. – The name refers to Guatemala, where the type material was collected. The specimens are mentioned by Berkeley & Berkeley (1939) as *Glycera lancadivae*.

Remarks. – *Glycera guatemalensis* shows some similarities to *G. 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 *G. branchiopoda* have a pointed triangular base and parapodia with only one postchaetal lobe. *G. sphyrabrancha* Schmarda, 1861, a species with the same type of papillae and ailerons as *G. guatemalensis*, lacks elongated notopodial prechaetal lobes and ventral cirri, has only one

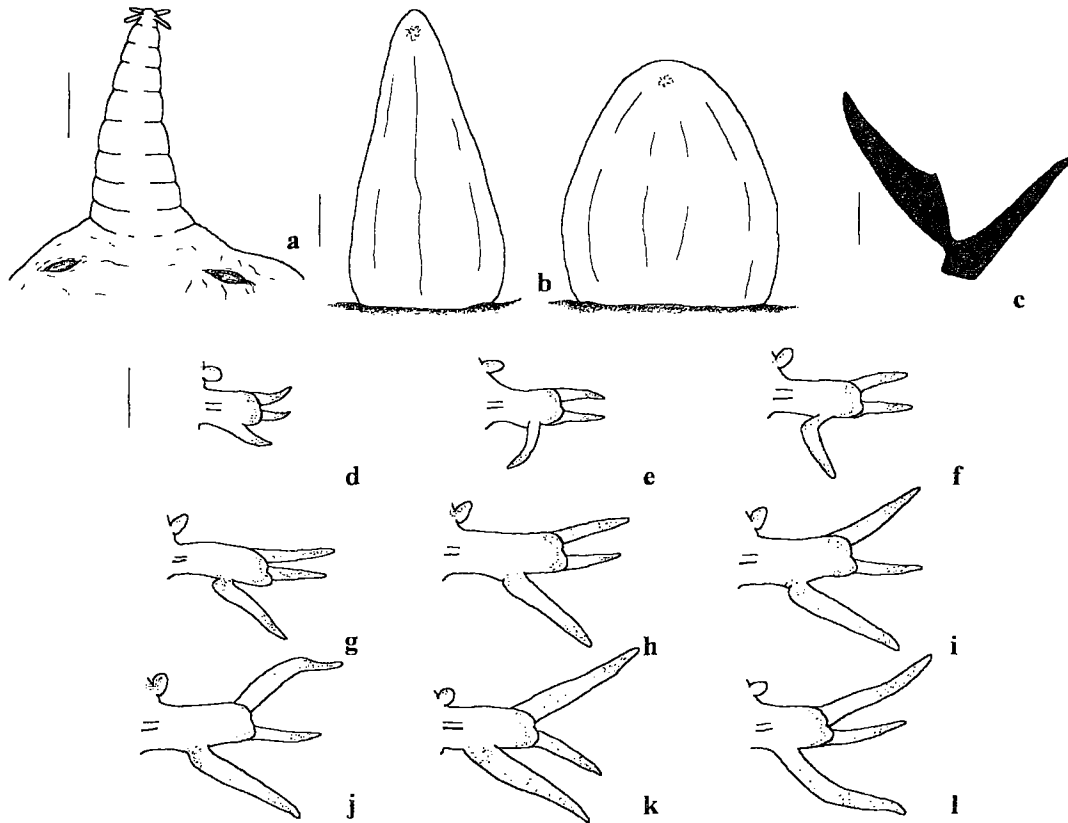


Fig. 4. *Glycera guatemalensis* n. sp. - a, Prostomium; b, Proboscoidal papillae; c, Aileron; d, Anterior parapodium; e-l, Parapodia from mid-body; (b, d-l, posterior view; d-l, chaetae not shown; a-b, d-l, USNM35980, holotype; c, SMF 9392, paratype; scale bars, a, d-l = 0.5mm, b = 0.02 mm, c = 0.2 mm).

postchaetal lobe, and simple, digitiform branchiae situated termino-dorsally, in contrast to *G. guatemalensis* where branchiae are absent.

Glycera madagascariensis n. sp.

Figs. 5, 9a-b, 10

Material examined.

Type material. - Madagascar, Baie des Ambaro, 13°01.00'S 48°37.00'E, 29 Feb 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 Aug 1968, 15 m; paratype: cs/44/177/2.2/1.6 (SMF 9469).

Additional material. - Madagascar, Region de Nosy Bé, Canyon du Banc cinq mètres St. 1, 13°26.00'S 47°58.00'E, 6 May 1968, 74 m, sand and corals; af/15/67/1.6/1.0 (SMF 9470) - Canyon du Banc cinq mètres St. 2, 6 May 1968, 64 m, sand and corals; cs/21/122/1.6/1.1 (SMF 9471) - Madagascar, Banc Pra-

cel, near Chesterfield Islands St. 8, 16°21.00'S 43°50.30'E, 9 Apr 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 Apr 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 Apr 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 Apr 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 Apr 1970, 48 m, sand; af/24/106/2.6/1.7 (SMF 9475).

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

Description. - Body up to 47 mm long with up to

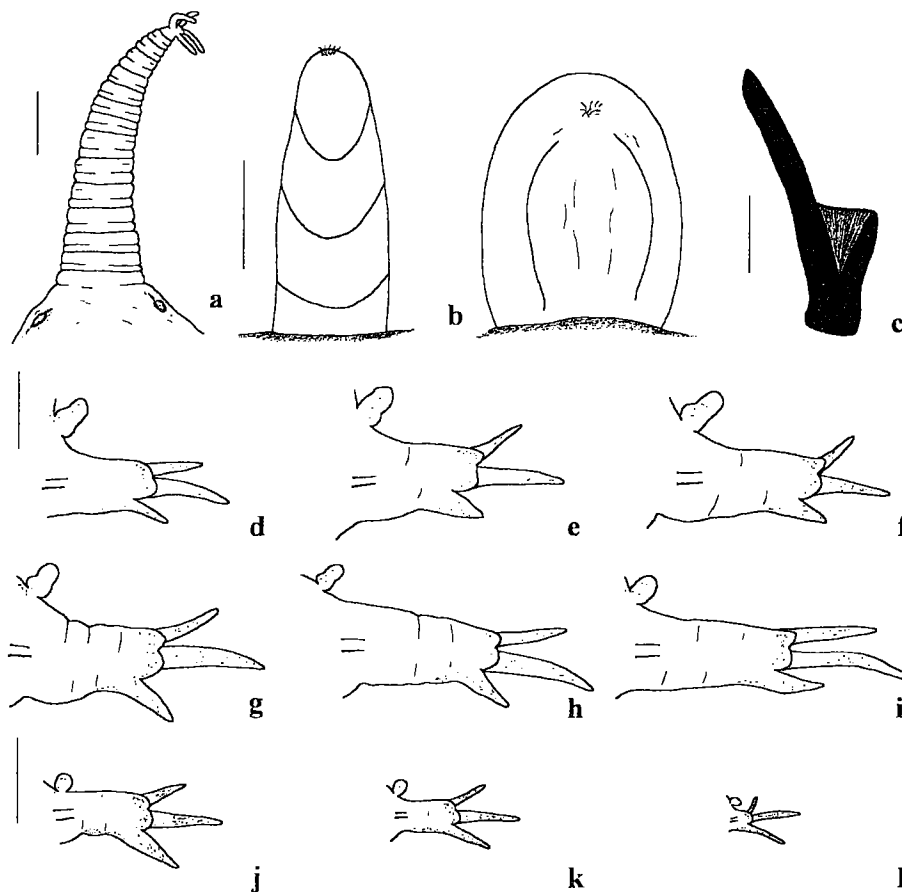


Fig. 5. *Glycera madagascariensis* n. sp. - a, Prostomium; b, Proboscis; c, Aileron; d, Anterior parapodium; e-k, Parapodia from mid-body; l, Posterior parapodium (b, d-l, posterior view; d-l, chaetae not shown; a-c, j-l, SMF 9468, holotype; d-i, SMF 9475; scale bars, a, d-l = 0.2 mm, b = 0.02 mm, c = 0.1 mm).

177 segments. Mid-body segments more or less triannulate; two anterior annuli of about same length, posterior annulus slightly longer; middle annulus bearing parapodia and dorsal cirri. Conical prostomium consisting of about 12-15 rings (Fig. 5a). 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. 5b, 9a-b). Ailerons with triangular base (Fig. 5c). First two parapodia uniramous; following parapodia biramous (Fig. 5d-l). Two slender triangular to digitiform prechaetal lobes, neuropodial lobe always distinctly longer and wider than notopodial; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe much shorter than neuropodial. Two shorter postchaetal lobes; anteriorly both lobes

rounded; in following parapodia notopodial lobe blunt triangular and slightly longer than rounded neuropodial lobe; in posterior parapodia notopodial lobe 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. 10).

Etymology. – The name refers to Madagascar, the type locality.

Remarks. – *Glycera madagascariensis* resembles *G. fallax* Quatrefages, 1850 in the types of proboscoidal papillae, structure of the ailerons, prostomium, and parapodia, but the latter species has simple, retractile, blister-like branchiae, situated medially on the anterior side of the parapodia, while branchiae are absent in *G. madagascariensis*.

Glycera prosobranchia n. sp.

Figs. 6, 9c-d, 10

Material examined.

Type material. – Panama, Caribbean Sea, Rio Chagres, near Fort San Lorenzo, St. 234-1, 8 Feb 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 Apr 1973, fine sand; paratype: cs/30/145/3.1/2.1 (SMF 9676).

Additional material. – R/V EL PUMA, Mexico, Gulf of California, Cortés II St. 37, 31°16.1'N 114°21.7'W, 16 Mar 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) – R/V EL PUMA, Mexico, 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 Jul 1980, 10 m; cs/13/89/1.4/1.0; af/22/110/2.0/1.4; af/21/111/2.2/1.7 (USNM 79980) – Gulf of Nicoya St. 35-2, 9°55'42"N 84°47'40"W, 12 Jun 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 Jun 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 Jun 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 Apr 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 Apr 1973; cs/34/155/2.6/1.9; cs/24/114/2.0/1.4 (USNM 186549) – Panama, Venado Beach, St. 80-1, 19 Mar 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. – Proboscoidal papillae mainly with terminal fingernail structure with short stalk and some longitudinal ridges on nail; ailerons with triangular base; 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 bearing parapodia and dorsal cirri, about as long as posterior annulus or slightly longer. Conical prostomium consisting of about 11-13 rings (Fig. 6a). 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. 6b, 9c-d). Ailerons with triangular base (Fig. 6c). First two parapodia uniramous; following parapodia biramous (Fig. 6d-l). Two slender triangular to digitiform prechaetal lobes, notopodial lobe usually slightly longer than neuropodial; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe slender triangular and longer than rounded neuropodial lobe; in posterior parapodia notopodial lobe more slender, in last parapodia notopodial lobe 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.

Distribution. – East Pacific, Mexico to Panama, and Caribbean coast of Panama; intertidal to 30 m (Fig. 10).

Etymology. – This species is named for the presence of branchiae in the anterior half of the body.

Remarks. – *Glycera prosobranchia* and *G. tridactyla* Schmarda, 1861 are very similar with respect to types of proboscoidal papillae, aileron, and parapodia. However, branchiae are restricted to anterior parapodia in *G. prosobranchia*, while they continue to near the end of the body in *G. tridactyla*. In addition, *G. tridactyla* is known from the coasts of Europe, Africa, Asia, and Australia, whereas *G. prosobranchia* has only been found on the east Pacific coast and the Caribbean coast of Panama.

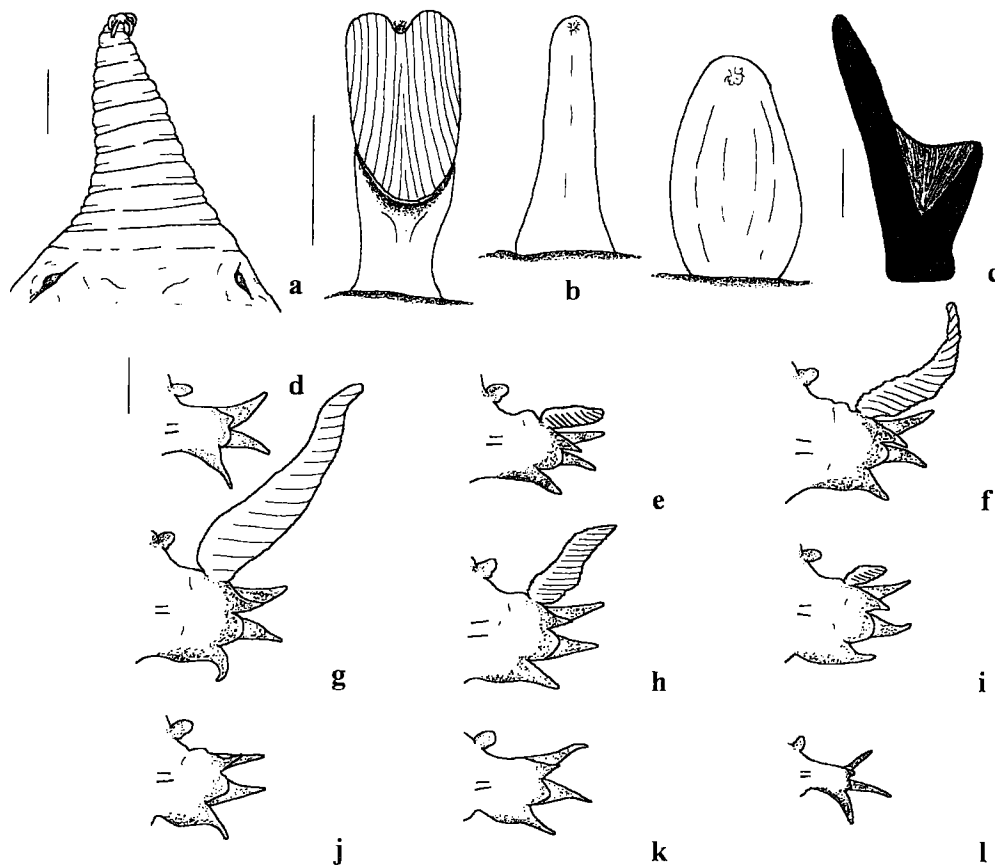


Fig. 6. *Glycera prosobranchia* n. sp. - a, Prostomium; b, Proboscoidal papillae; c, Aileron; d, Anterior parapodium; e-k, Parapodia from mid-body; l, Posterior parapodium (b, d-l, posterior view; d-l, chaetae not shown; a, c, SMF 9676, paratype; b, USNM 186549; d-l, USNM 186547, holotype; scale bars, a, d-l = 0.2 mm, b = 0.02 mm, c = 0.1 mm).

Glycera pseudorobusta n. sp.

Figs. 7, 9e-f, 10

Glycera robusta — Gardiner 1975: 162; fig. 17o (non Ehlers, 1868)

Material examined.

Type material. — U.S.A., North Carolina, Wrightsville Beach, Intracoastal Waterway and Banks Channel, 8 Mar 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. — Canada, Nova Scotia, Sandy Cove, Jun 1954, intertidal, sand; af/346/379/11.0/8.0 (USNM 30949) — U.S.A., Maine, Boothbay Harbor, 19 Jul 1954, mud and sand; af/173/154/10.0/7.5 (USNM 30944) — U.S.A., Massachusetts, Barnstable, 30 Aug 1875; af/89/140/10.0/7.0 (USNM 16041 partim) — Massachusetts, Nantucket Sound, Jul 1958, 14.6 m, 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, Jul 1958, 14.6 m; af/62/148/4.0/2.4; af/29/76/3.3/2.4 (USNM 118372) — U.S.A., Georges Bank St. 21, Southern Slope, 40°44.02'N 67°18.31'W, 9 May 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 Nov 1981, 108 m; af/38/98/5.0/3.7 (USNM 149018) — U.S.A., Maryland, Chincoteague Bay; af/154/179/9.2/6.7 (USNM 30945) — U.S.A., North Carolina, Cape Lookout, 16 Apr 1976; cs/178/306/4.1/2.2 (USNM 61733) — U.S.A., Georgia, Sapelo Island St. S 35, 23 Jun 1969; af/60/182/5.0/3.3 (SMF 9451).

Diagnosis. — Proboscoidal papillae mainly conical with 4-9 mainly V-shaped ridges; ailerons with rounded triangular base; parapodia of mid-body with more or less distinctly triangular

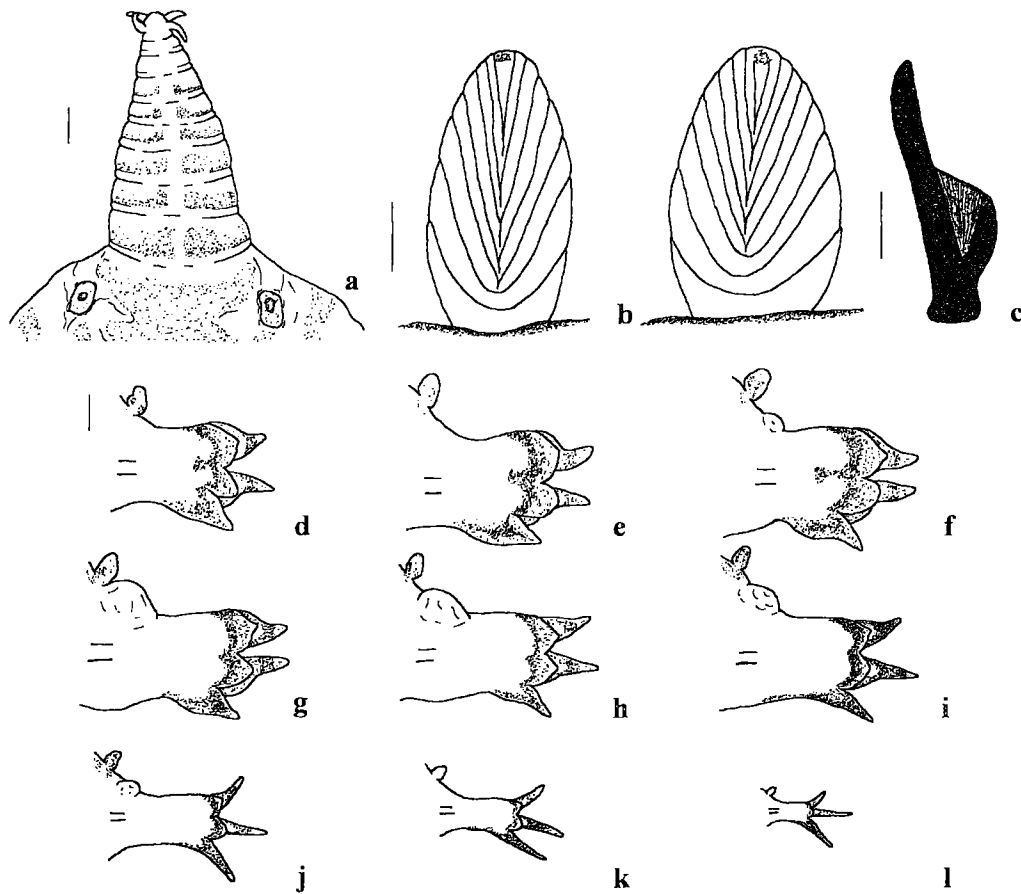


Fig. 7. *Glycera pseudorobusta* n. sp. - a, Prostomium; b, Proboscis papillae; c, Aileron; d, Anterior parapodium; e-k, Parapodia from mid-body; l, Posterior parapodium (b, d-l, posterior view; d-l, chaetae not shown; a-l, USNM 52963, holotype; scale bars, a, c-l = 0.2 mm, b = 0.02 mm).

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 bearing parapodia and dorsal cirri, about as long as posterior annulus or slightly longer. Conical prostomium consisting of about 10–11 rings (Fig. 7a). Proboscis with two types of papillae: 1. numerous conical papillae with about 4–9 ridges; 2. isolated, slightly broader, oval to globular papillae with about 4–8 ridges; ridges mainly V-shaped but a few U-shaped basally (Figs. 7b, 9e–f). Ailerons with rounded triangular base (Fig. 7c). First two parapodia uniramous; following parapodia biramous (Fig. 7d–l). Two slender triangular to

digitiform prechaetal lobes of about same length, notopodial lobe sometimes slightly wider than neuropodial; both lobes becoming slightly slimmer in posterior parapodia; in last parapodia notopodial lobe shorter than neuropodial. Two shorter postchaetal lobes; anteriorly both lobes rounded; in following parapodia notopodial lobe more or less distinctly triangular and slightly longer and wider than rounded to slightly triangular neuropodial lobe; in posterior parapodia both lobes 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

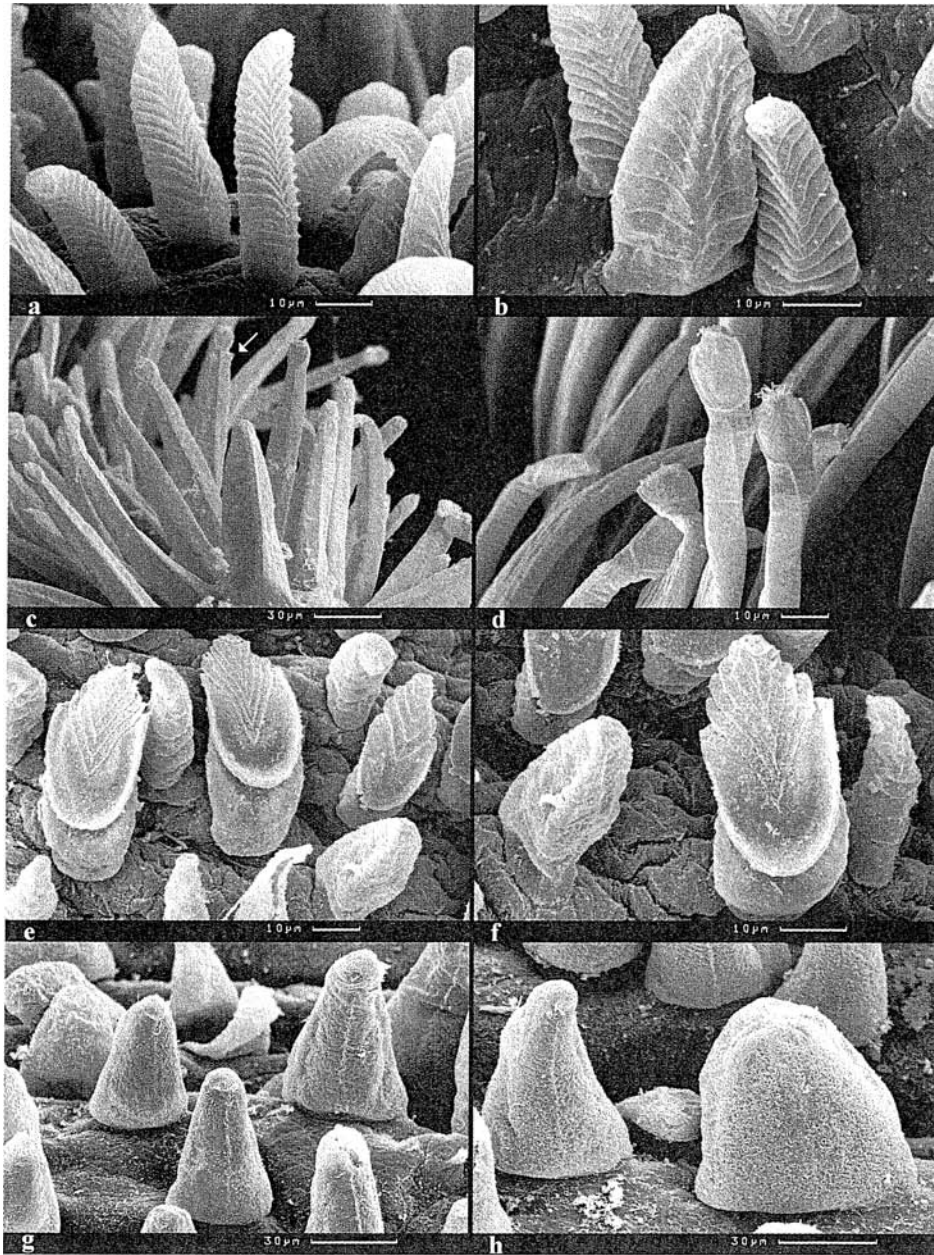


Fig. 8. Proboscis papillae. - a-b, *Glycera bassensis* n. sp; c-d, *Glycera benhami* n. sp; e-f, *Glycera gilbertae* n. sp; g-h, *Glycera guatemalensis* n. sp.

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.

Distribution. – Northwestern Atlantic coasts of North America; intertidal to 108 m (Fig. 10).

Etymology. – This species is named for its great similarity to *Glycera robusta* Ehlers, 1868. Gardiner (1975) gave a brief description of it as *Glycera robusta*.

Remarks. – In general, glycerids from both coasts of North America with a combination of characters as described above have been identi-

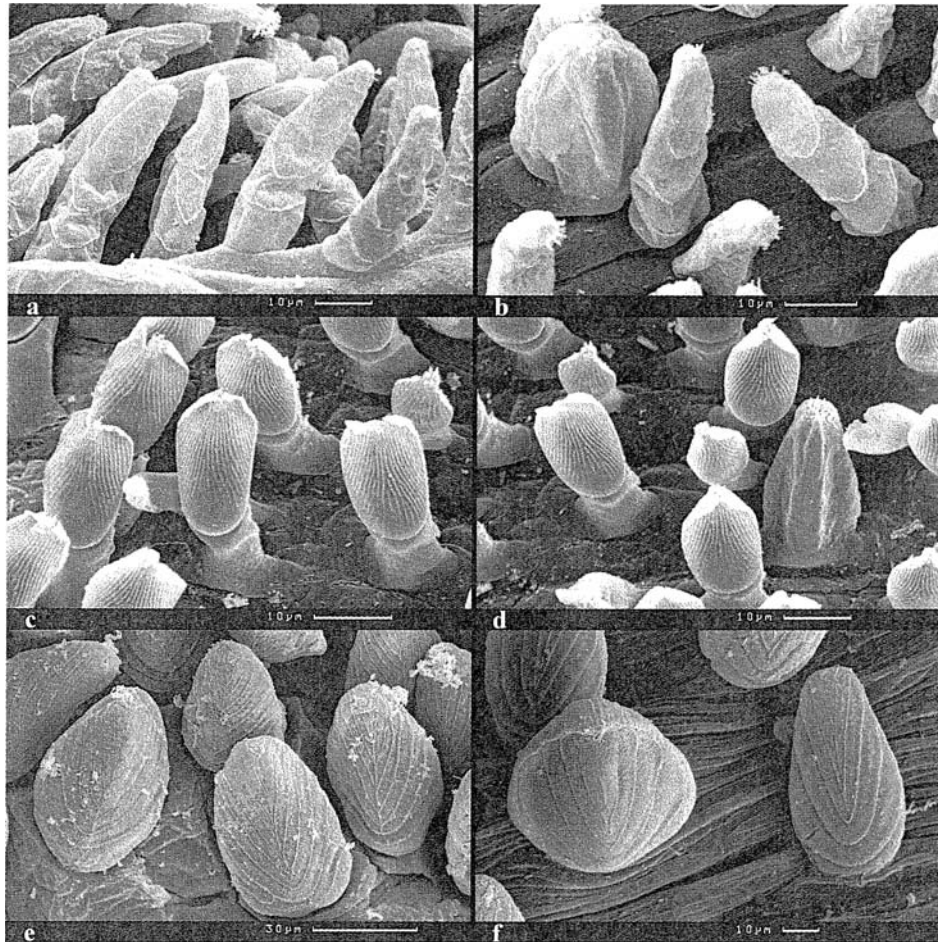


Fig. 9. Proboscis papillae. - a-b, *Glycera madagascariensis* n. sp.; c-d, *Glycera prosobranchia* n. sp.; e-f, *Glycera pseudorobusta* n. sp.

fied as *Glycera robusta* Ehlers, 1868. However, the proboscis papillae of these species show conspicuous differences. *G. pseudorobusta* has papillae with mainly V-shaped ridges and *G. robusta* only U-shaped ridges. In addition, *G. robusta* is known to occur only in the Pacific, whereas *G. pseudorobusta* is only known from the Atlantic coast of North America.

List of the 36 valid species of the genus *Glycera* together with their synonyms

Glycera africana Arwidsson, 1899

Glycera alba (O.F. Müller, 1776) syn: *Glycera alba* Rathke, 1843; *Glycera nigripes* Johnston, 1865 (partim); *Glycera danica* Quatrefages, 1866; ?*Rhynchobolus minutus* Bobretzky, 1870; ?*Glycera minuta* var. *sevastopolica* Czerniavsky, 1881; ?*Glycera minuta* var. *suchumica* Czerniavsky, 1881

Glycera americana Leidy, 1855 syn: *Glycera cirrata* Grube, 1857 (partim); *Glycera jucunda* Kinberg, 1865; *Glycera laevis* Kinberg, 1865; *Glycera edentata* Hansen, 1882; *Glycera incerta* Hansen, 1882; *Glycera chilensis* Arwidsson, 1899; *Glycera longissima* Arwidsson, 1899; *Glycera heteropoda* Hartmann-Schröder, 1962

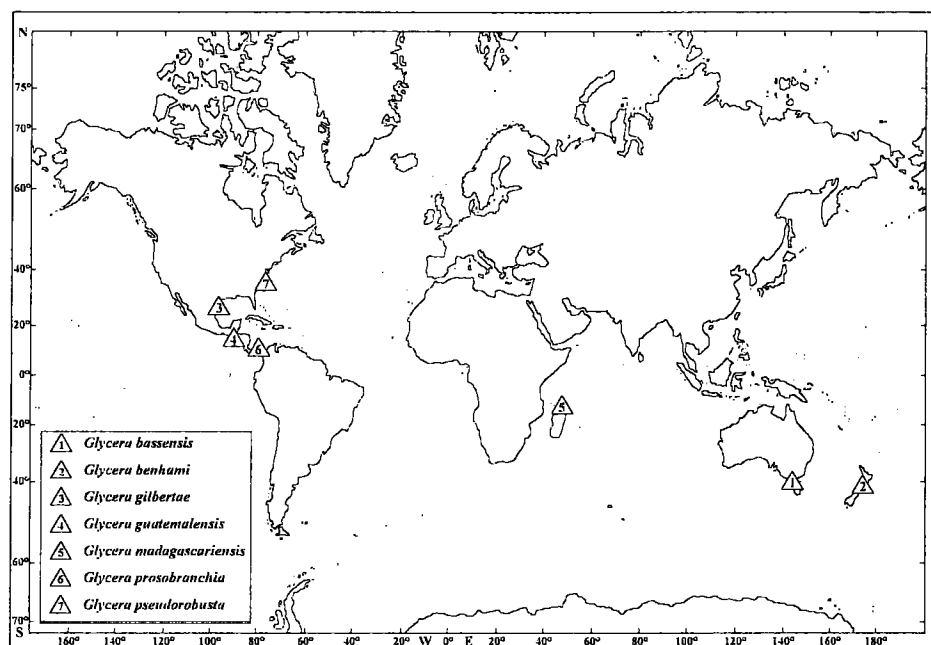
Glycera bassensis n. sp.

Glycera benhami n. sp.

Glycera branchiopoda Moore, 1911 syn: *Glycera profundi* Chamberlin, 1919b; *Hemipodus mexicanus* Chamberlin, 1919b

Glycera brevicirris Grube, 1870 syn: *Glycera cirrata* Grube, 1857 (partim); *Glycera martensii* Grube, 1870; ?*Glycera fusiformis* Fischli, 1900; *Glycera abbranchiata* Treadwell, 1901; *Glycera edwardsi* Gravier, 1902; *Telake epilolasis* Chamberlin, 1919b; *Glycera spadix* Treadwell, 1943

Glycera capitata Ørsted, 1842 syn: *Glycera setosa* Ørsted, 1842; *Glycera mulleri* Quatrefages, 1866 (partim); *Glycera kerguelensis* McIntosh, 1885; *Glycera nana* Johnson, 1901; *Hemipodia canadensis* Treadwell, 1937; *Glycera mimica* Hartman, 1965; ?*Glycera capitata abyssicola*

Fig 10: Loci typici of the new species of *Glycera*.

- Averincev, 1972; ?*Glycera capitata antarctica* Averincev, 1972
- Glycera celtica* O'Connor, 1987 syn: ?*Glycera dayi* O'Connor, 1987
- Glycera cinnamomea* Grube, 1874 syn: *Glycera manorae* Fauvel, 1932; *Glycera prashadi* Fauvel, 1932; *Glycera convoluta* var. *capensis* Monro, 1933
- Glycera dibranchiata* Ehlers, 1868
- Glycera fallax* Quatrefages, 1850 syn: ?*Glycera mitis* Johnston, 1865; *Glycera decorata* Quatrefages, 1866; *Glycera gigantea* Quatrefages, 1866; *Glycera vesiculosa* Parfitt, 1867; *Glycera folliculosa* Ehlers, 1868
- Glycera gilbertae* n. sp.
- Glycera guatemalensis* n. sp.
- Glycera knoxi* Kirkegaard, 1995
- Glycera lamelliformis* McIntosh, 1885 syn: *Glycera lamellipodia* Knox, 1960
- Glycera lapidum* Quatrefages, 1866 syn: *Glycera nigripes* Johnston, 1865 (partim); *Hamiglycera serrulifera* Ehlers, 1908
- Glycera macintoshi* Grube, 1877 syn: *Glycera saccibranchis* Grube, 1878; *Glycera subaenea* Grube, 1878 (partim); *Glycera hasidatensis* Izuka, 1912 (partim); *Glycera derbyensis* Hartmann-Schröder, 1979
- Glycera macrobranchia* (Moore, 1911) syn: *Glycera exigua* Chamberlin, 1919a; *Glycera orientalis* Buzhinskaja, 1992
- Glycera madagascariensis* n. sp.
- Glycera natalensis* Day, 1957 syn: *Glycera taprobanensis* Silva, 1965
- Glycera nicobarica* Grube, 1868 syn: *Glycera decipiens* Marenzeller, 1879; *Glycera amboinensis* McIntosh, 1885; *Glycera chirori* Izuka, 1912; *Glycera hasidatensis* Izuka, 1912 (partim)
- Glycera onomichiensis* Izuka, 1912 syn: *Glycera subaenea* Grube, 1878 (partim); *Glycera hasidatensis* Izuka, 1912 (partim)
- Glycera ovigera* Schmarda, 1861
- Glycera oxycephala* Ehlers, 1887 syn: *Glycera ehlersi* Arwidson, 1899; ?*Glycera capitata* var. *benguellana* Augener, 1931; *Glycera tenuis* Hartman, 1944
- Glycera pacifica* Kinberg, 1865 syn: *Glycera opisthobranchiata* Marenzeller, 1879; *Glycera rugosa* Johnson, 1901; *Glycera misakiensis* Izuka, 1912; ?*Glycera basibranchia* Chamberlin, 1919a
- Glycera posterobranchia* Hoagland, 1920
- Glycera prosobranchia* n. sp.
- Glycera pseudorobusta* n. sp.
- Glycera robusta* Ehlers, 1868 syn: ?*Glycera dentibranchia* Lee, 1984
- Glycera russa* Grube, 1870 syn: *Glycera lamelliformis* McIntosh, 1885 (partim)
- Glycera sagittariae* McIntosh, 1885
- Glycera sphyrabranchia* Schmarda, 1861 syn: *Glycera longipinnis* Grube, 1878; *Glycera asymmetrica* Day, 1973
- Glycera tessellata* Grube, 1863 syn: *Glycera fundicola* Chamberlin, 1919b; ?*Glycera tessellata* var. *minor* La Greca, 1947
- Glycera tridactyla* Schmarda, 1861 syn: ?*Glycera convoluta* Keferstein, 1862; *Glycera branchialis* Quatrefages, 1866; ?*Glycera retractilis* Quatrefages, 1866; ?*Glycera convoluta* var. *sevastopolica* Czerniavsky, 1881; ?*Glycera convoluta* var. *suchumica* Czerniavsky, 1881; *Glycera convoluta* var. *uncinata* Rioja, 1918; ?*Glycera alba* var. *cochinensis* Southern, 1921
- Glycera unicornis* Savigny, 1818 syn: *Glycera meckelii* Audouin & Milne Edwards, 1833; ?*Glycera rouxii* Audouin & Milne Edwards, 1833; ?*Glycera nigripes* Johnston, 1865 (partim); *Glycera mulleri* Quatrefages, 1866 (partim); *Glycera peruviana* Quatrefages, 1866; *Glycera*

goësi Malmgren, 1867; ?*Glycera mauritiana* Grube, 1870; *Glycera mesnili* Saint-Joseph, 1898; *Glycera guinensis* Augener, 1918

Glycera incertae sedis: *Glycera alba* var. *adspersa* Fauvel, 1939; *Glycera albicans* Quatrefages, 1850; *Glycera calbucoensis* Hartmann-Schröder, 1962; *Glycera carnea* Blanchard, 1849; *Glycera corrugata* Baird, 1863; *Glycera dubia* (Blainville, 1825); *Glycera koehleri* Roule, 1896; *Glycera kraussii* Stimpson, 1856; *Glycera lancadiuae* Schmarda, 1861; *Glycera papillosa* Grube, 1857; *Glycera polygona* Risso, 1826; *Glycera pusilla* Delle Chiaje, 1844; *Glycera septentrionalis* (Roule, 1896); *Glycera siphonostoma* (Delle Chiaje, 1822); *Glycera taurica* Czerniavsky, 1881; *Glycera teres* (Dalyell, 1853); *Glycera verdescens* Chamberlin, 1919a

Key to the species of *Glycera* Savigny, 1818

1. Proboscical papillae without terminal fingernail structure 2
 - Proboscical papillae with terminal fingernail structure 26
2. One postchaetal lobe in all parapodia ... 3
 - Two postchaetal lobes at least from parapodia of mid-body 7
3. In mid-body notopodial prechaetal lobes shorter than neuropodial; branchiae absent 4
 - In mid-body prechaetal lobes of about same length, or notopodial lobes longer; branchiae present or absent 5
4. Digitiform proboscical papillae with straight, median, longitudinal ridge; ailerons with pointed triangular base; notopodial prechaetal lobes slightly shorter than neuropodial
 - *Glycera capitata* Ørsted, 1842
 - Digitiform proboscical papillae with undulating ridge; ailerons with slight dent in pointed triangular base; notopodial prechaetal lobes distinctly shorter than neuropodial
 - *Glycera lapidum* Quatrefages, 1866
5. Proboscical papillae with straight, median, longitudinal ridge or without ridges 6
 - Conical proboscical papillae with about 5-20 ridges; ailerons with slightly arched base; prechaetal lobes of about same length; branchiae absent
 - *Glycera oxycephala* Ehlers, 1887
6. Branchiae absent; ailerons with pointed triangular base; notopodia prechaetal lobes longer than neuropodial; digitiform proboscical papillae with straight, median, longitudinal ridge ..
 - *Glycera branchiopoda* Moore, 1911
 - Simple, digitiform branchiae, situa-
- ted terminodorsally on parapodia; ailerons with deeply incised base; prechaetal lobes of about same length; digitiform proboscical papillae without ridges
 - *Glycera sphyrabrancha* Schmarda, 1861
7. Ailerons with deeply incised base; both postchaetal lobes short, rounded; branchiae absent 8
 - Ailerons with interrampal plate; postchaetal lobes variable; branchiae present or absent 11
8. Prechaetal lobes of about same length; digitiform proboscical papillae present 9
 - In mid-body notopodial prechaetal lobes longer than neuropodial; conical proboscical papillae with straight, median, longitudinal ridge
 - *Glycera guatemalensis* n. sp.
9. Digitiform proboscical papillae with straight, median, longitudinal ridge 10
 - Digitiform proboscical papillae with about 6-20 ridges
 - *Glycera brevicirris* Grube, 1870
10. Digitiform proboscical papillae with longitudinal ridge only
 - *Glycera tessellata* Grube, 1863
 - Digitiform proboscical papillae with additional, single, terminal, U-shaped ridge *Glycera benhami* n. sp.
11. Proboscical papillae with more than 3 ridges 12
 - Proboscical papillae with up to 3 ridges 18
12. Proboscical papillae usually with more than 10 ridges 13
 - Proboscical 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 proboscical papillae with about 6-16 ridges; ailerons with triangular base; both postchaetal lobes more or less triangular *Glycera russa* Grube, 1870
14. Ailerons with pointed triangular base; digitiform proboscical papillae with about 10-17 ridges; rounded or more or less blunt triangular notopodial and slightly longer, triangular neuropodial postchaetal lobes *Glycera bassensis* n. sp.
 - Ailerons with rounded triangular base; conical proboscical papillae with about 6-16 ridges; both postchaetal lobes more or less blunt triangular ...

- *Glycera celtica* O'Connor, 1987
15. In mid-body postchaetal lobes of about same length or notopodial lobes slightly longer than neuropodial; blister-like branchiae dorsally of parapodial bases . 16
- In mid-body notopodial postchaetal lobes slightly or distinctly shorter than neuropodial; two digitiform branchiae or branchiae absent 17
16. Conical proboscoidal papillae with 4-9 U-shaped ridges; ailerons with triangular base; rounded to blunt triangular notopodial and slightly shorter, more rounded neuropodial postchaetal lobes *Glycera robusta* Ehlers, 1868
- Conical proboscoidal papillae with 4-9 mainly V-shaped ridges; ailerons with rounded triangular base; more or less distinctly triangular notopodial and shorter, more rounded neuropodial postchaetal lobes *Glycera pseudorobusta* n. sp.
17. Two simple, digitiform branchiae, situated dorsally and ventrally on parapodial bases; conical proboscoidal papillae with 4-8 ridges; ailerons with rounded triangular base; rounded notopodial and longer, triangular neuropodial postchaetal lobes *Glycera dibranchiata* Ehlers, 1868
- Parapodia without branchiae; conical proboscoidal papillae with 4-6 ridges; ailerons with triangular base; postchaetal lobes more or less distinctly triangular, notopodial lobes slightly shorter than neuropodial *Glycera knoxi* Kirkegaard, 1995
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 proboscoidal papillae with 3 ridges; ailerons with rounded triangular or triangular base 19
- Parapodia of mid-body with two postchaetal lobes of about same length or notopodial lobes only slightly longer than neuropodial; branchiae present or absent; conical proboscoidal papillae variable; ailerons with triangular base . 20
19. One to six retractile, digitiform branchial rami; ailerons with rounded triangular base; in anterior parapodia only one medially inserted, slender triangular postchaetal lobe *Glycera macintoshi* Grube, 1877
- Simple, retractile, digitiform branchiae; ailerons with triangular base; all biramous parapodia with two postchaetal lobes *Glycera nicobarica* Grube, 1868
20. Parapodia with retractile branchiae; prechaetal lobes of about same length . 21
- Parapodia without branchiae; notopodial prechaetal lobes distinctly shorter and narrower than neuropodial; notopodial postchaetal lobes blunt triangular and slightly longer than rounded neuropodial lobes; conical proboscoidal papillae with 3 ridges *Glycera madagascariensis* n. sp.
21. Both postchaetal lobes short and more or less rounded; simple, retractile branchiae, situated medially on anterior side of parapodia; conical proboscoidal papillae with 3 ridges 22
- Both postchaetal lobes slender triangular; branchiae variable; conical proboscoidal papillae variable 23
22. Branchiae blister-like; rounded, sometimes slightly blunt triangular notopodial and slightly shorter, rounded neuropodial postchaetal lobes *Glycera fallax* Quatrefages, 1850
- Branchiae digitiform; rounded, sometimes slightly blunt triangular postchaetal lobes, notopodial lobes usually slightly broader and longer than neuropodial . *Glycera sagittariae* McIntosh, 1885
23. Retractable, bush-like branchiae, situated dorsally on posterior side of parapodial bases 24
- One or two retractile, digitiform branchial rami, situated medially on anterior side of parapodia; conical proboscoidal papillae with 3 ridges *Glycera unicornis* Savigny, 1818
24. Conical proboscoidal papillae with 2 or 3 ridges 25
- Conical proboscoidal papillae with Y-shaped ridge in combination with 1-3 vertical ridges apically *Glycera ovigera* Schmarda, 1861
25. Conical proboscoidal papillae with 3 ridges *Glycera pacifica* Kinberg, 1865
- Conical proboscoidal papillae with 2 ridges *Glycera americana* Leidy, 1855
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. Proboscoidal papillae with long stalk and some longitudinal ridges on nail; ailerons with pointed triangular base .. 28
- Proboscoidal papillae with short stalk and without ridges on nail; ailerons with triangular base; blister-like branchiae dorsally on parapodial bases
..... *Glycera lamelliformis* McIntosh, 1885
28. Parapodia without branchiae
..... *Glycera onomichiensis* Izuka, 1912
- One to five digitiform branchial rami, situated dorsally on parapodial bases
..... *Glycera cinnamomea* Grube, 1874
29. Parapodia with branchiae 30
- Parapodia without branchiae; proboscoidal papillae with short stalk and 4-6 V-shaped terminal ridges on nail; ailerons with triangular base
..... *Glycera gilbertae* n. sp.
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 and equally slender triangular; simple, digitiform branchiae, situated medio-dorsally on parapodia; proboscoidal papillae with medium-sized stalk; ailerons with pointed triangular base
..... *Glycera posterobranchia* Hoagland, 1920
31. All biramous parapodia with two postchaetal lobes 32
- Only one, medially inserted, slender triangular postchaetal lobe in anterior parapodia; proboscoidal papillae with short stalk; ailerons with triangular base .. *Glycera macrobranchia* (Moore, 1911)
32. Proboscoidal papillae with long stalk ... 33
- Proboscoidal papillae with medium-sized or short stalk 34
33. Stalk without ridges; ailerons with pointed triangular base
..... *Glycera alba* (O.F. Müller, 1776)
- Stalk with numerous ridges; ailerons with triangular base
..... *Glycera natalensis* Day, 1957
34. Proboscoidal papillae with short stalk; prostomium consisting of about 11-15 rings; ailerons with triangular base ... 35
- Proboscoidal papillae with medium-sized stalk; prostomium consisting of about 19-28 rings; ailerons with pointed triangular base
..... *Glycera africana* Arwidsson, 1899
35. Branchiae from anterior to near posterior end .. *Glycera tridactyla* Schmarda, 1861
- Branchiae limited to anterior half of body *Glycera prosobranchia* n. sp.

MATERIAL AND METHODS

Observations, drawings, and measurements were made using a Leica Wild MZ 8 stereo microscope and a LEITZ Laborlux S compound microscope. For SEM observations, specimens were dehydrated via a graded ethanol series, critical-point dried using CO₂, and subsequently coated with gold-palladium. Observations were performed with a CamScan CS 24 SEM. In the 'Material examined' section of each species, cs refers to complete specimen, af to anterior fragment. This is followed by numbers indicating (in mm where appropriate): length of specimen/number of chaetigers/width of specimen incl. parapodia/width excl. parapodia.

Terminology: Only papillae with clearly separated "nail" are referred to as fingernail papillae (Figs. 3, 6). Their stalk is defined as long, medium-sized or short, if it is two times longer, about as long or shorter than the nail, respectively (Figs. 3, 6).

The ailerons of the species referred to the genus *Glycera* consist of an outer and inner ramus and sometimes an interrampal plate. The area where the two rami are connected by the interrampal plate is defined as base. The base may be slightly arched, rounded triangular (Fig. 7), triangular (Figs. 3, 5, 6), or pointed triangular (Fig. 1). If the interrampal plate is lacking, the aileron is deeply incised (Figs. 2, 4).

Preservation of the originally more or less uniform pigmentation of the specimens depends on the time kept in alcohol or formalin. Pigmentation is best preserved on the parapodia and the prostomium and has been indicated by stippling in the drawings (Figs. 1-7).

Specimens are deposited in the Australian Museum, Sydney (AM), Museum of Victoria, Melbourne (MV), the National Institute of Water & Atmospheric Research (NIWA), formerly: New Zealand Oceanographic Institute, Wellington (NZOI), the Senckenberg Museum, Frankfurt (SMF), the Universidad Nacional Autónoma de México (UNAM), and the United States National Museum of Natural History (Smithsonian Institution), Washington D.C. (USNM).

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