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# Benthic assemblages of *Polychaeta* in chosen regions of the Admiralty Bay (King George Island, South Shetland Islands)*

ABSTRACT: By means of the synthetic diagram method (Romaniszyn 1970) populations of benthic *Polychaeta* at the depth ranging from 15 to 250 m of the Admiralty Bay (South Shetland Islands) were analysed. During the summer season of 1979/80 three replicate subsamples were taken at 18 stations situated along 3 crosssections using the Van Veen grab of a catching area of 0.09 m$^2$; 61 benthic taxa of *Polychaeta* were recorded in these samples. The characteristics of particular assemblages are presented together with their tendency to change as a result of substrate quality, depth and position in the study area. Considerable affinity between the fauna of *Polychaeta* in the shallowest part of the bay and the composition and structure of polychaete assemblages occurring at Arthur Harbor (Anvers Island), which were described by Richardson and Hedgpeth (1977) was recorded.

Key words: Antarctic, South Shetlands, *Polychaeta*, benthic fauna.

## 1. Introduction

The quantitative analysis of the fauna of soft bottom constitutes an important and interesting field of research, that was pointed out by Richardson and Hedgpeth (1977). This was the incentive to undertake the quantitative investigation of fauna occurring in the muddy bottom of the Admiralty Bay (King George Island), using methods of sampling similar to those used by the above cited authors. Information about the abundance and biomass distribution at various depths of the Admiralty Bay are included in the paper by Jażdżewski et al. (1986). Their

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results show for instance, that *Polychaeta*, beside *Bivalvia* and *Amphipoda*, were dominant in terms of abundance, while together with *Ascidiacea*, *Ophiuroidea*, *Echinoidea* and *Bivalvia* they constituted most important component of benthos biomass. The present study was an attempt at analysing *Polychaeta* assemblages of the region in question.

## 2. Study area, materials and methods

The Admiralty Bay (Fig. 1) is the largest bay of the South Shetlands. Its south border joining the Demay Point with Syrezol Rocks separates an area of about 120 km$^2$ (Jażdżewski et al., 1986). The Mac Kellar and Martel Inlets constitute the bay's northern part and the Ezcurra Inlet — its western part. It has been accepted in the present work to call the rest of the water body "the main basin of the bay". In its southern part, the bay broadly opens into the Bransfield Strait. The maximum depth of the bay is about 600 m; its water volume is estimated to be about 18 km$^3$ (Pruszak 1980). The length of its coastline is 84,4 km, 46,4 km of this is a glacial coastline (Rakusa-Suszczewski 1980), while the rest is rocky, stony or of gravel and sand, occurring mainly on the west coast of the bay and south coast of the Ezcurra Inlet. In the north and east of the bay ice coastline dominates.

From the characteristics of the bay's water temperature and salinity in summer, presented by Szafrański and Lipski (1982), it follows that at similar depths there is little variability in the bottom water salinity. It increases slightly with depth; in surface water the salinity ranges from 33,30 to 34,04$^0/_{00}$; at the depth of 200—250 m from 33,25 to 33,40$^0/_{00}$; and at the bottom, at the depth of 400—500 m only from 34,50 to 34,57$^0/_{00}$. The temperature of surface water ranged from 0.18°C to 2.81°C in summer. A much higher thermal stability was recorded at a depth of 400 m; the range of temperature was −0.23 to 0.26°C (Szafrański, Lipski 1982). In winter water temperature under ice cover is more stable and ranges from −2.0 to −1.6°C (Presler 1980).

The water of the Admiralty Bay is characterized by a high content of suspended matter, the amount of which is five times higher than in open waters of Antarctica (Pęcherzewski 1980). The highest quantities of suspended matter, amouting to 182.6 mg·l$^{-1}$, were recorded off the shore, close to the outlets of streams. The water of the Ezcurra Inlet is distinguished by a much higher content of suspended matter than that of the water of the main basin of the bay. On the map (Fig. 1) areas with particularly high inflow of suspended matter from land are marked with dashed lines.

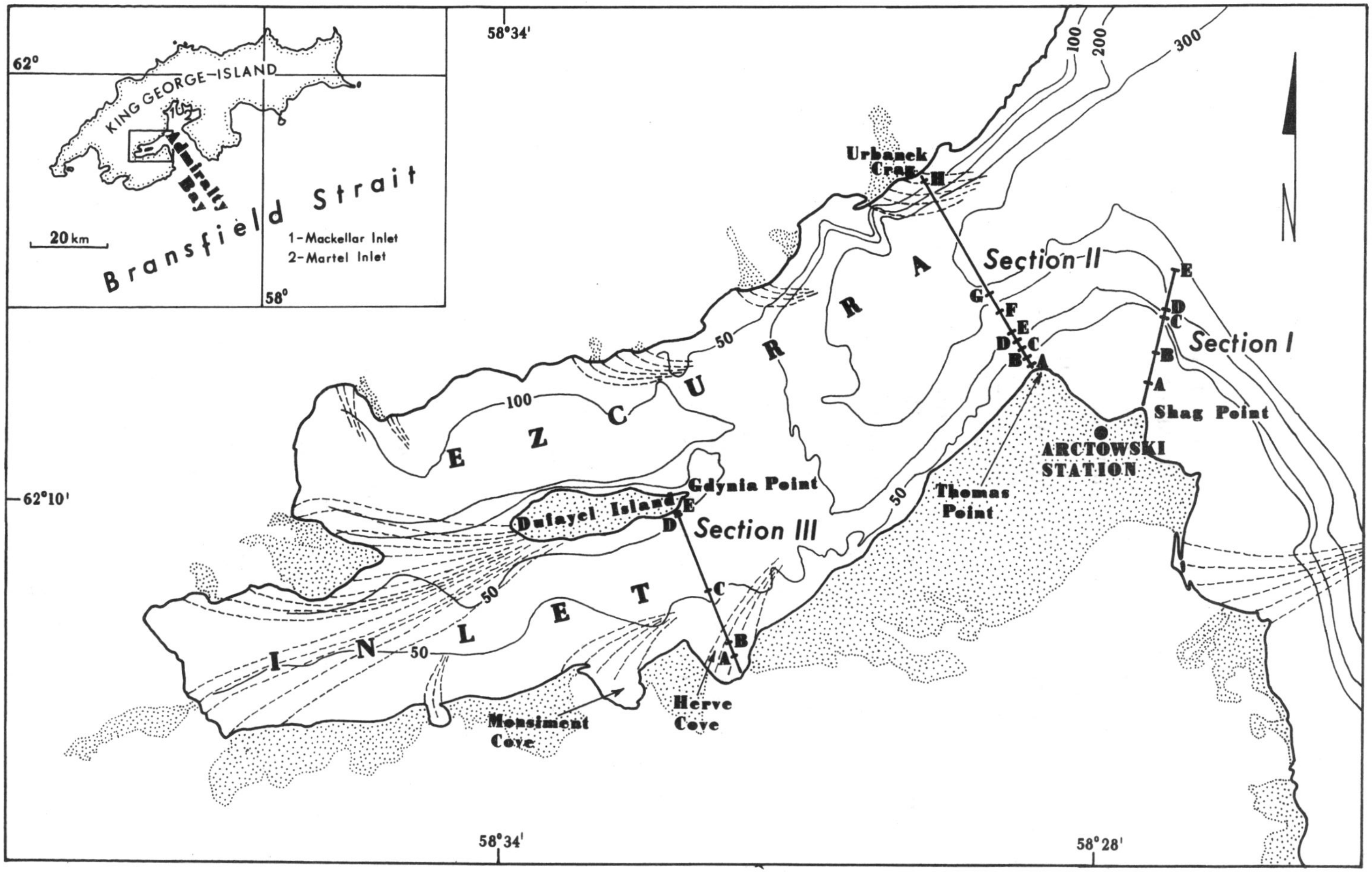


Fig. 1. Study area — western part of the Admiralty Bay. Three sections with 18 stations are indicated. Dotted areas are free of ice, dashed lines indicate to the particularly intensive inflow of suspended matter from land.

The waters of the Admiralty Bay are rich in oxygen and in this respect do not differ from the open area of the Southern Ocean (Samp 1980). The contents of nitrates, nitrites and phosphates in the bay are also high and typical of Antarctic waters.

The macrophytobenthos of the Admiralty Bay consists of about 18 species of algae, which occur in several agglomerations covering 11,5% of the total bottom surface of the bay (Zieliński 1981, Furmańczyk and Zieliński 1982). The lower limit of algae occurrence is at a depth of about 90 m.

The materials of the present analysis were collected from December 1979 to March 1980, during the IVth Polish Antarctic Expedition of the Polish Academy of Sciences to the "H. Arctowski" Station. The samples were taken at 18 stations situated along 3 sections (Fig. 1, Tab. II), at depths ranging from 15 to 250 m. At each station the bottom sediments were sampled three times with a 0.09 $m^2$ Van Veen grab and the 3 subsamples obtained were considered as a whole in further investigation, the total sampled area at the station being thus 0.27 $m^2$. The symbols used in marking the stations are as follows: Roman numerals stand for the number of the section, Arabic numerals for the depths, and capital letters for the position of the station within the section (Fig. 1).

The type of sediment in subsequent stations and the occurrence of macroalgae, is showed in Table I. As the type of sediment was only

Table I

Character of the bottom at particular stations. Capital letters stand for the position of the station within the section (see Fig. 1) and arabic numerals stand for depths (m)

| Section I | | Section II | | Section III | |
|---|---|---|---|---|---|
| $A^{15}$ | sand; macroalgae | $A^{15}$ | sand; macroalgae | $A^{15}$ | silt |
| $B^{30}$ | sand; macroalgae | $B^{30}$ | silty sand or silt; macroalgae | $B^{30}$ | silt |
| $C^{80}$ | silt; macroalgae | $C^{60}$ | sandy silt or silt; macroalgae | $C^{70}$ | clayey silt |
| | | $D^{90}$ | silt; macroalgae | | |
| | | $E^{120}$ | silt | | |
| $D^{150}$ | silt | $F^{170}$ | clayey silt | | |
| $E^{250}$ | clayey silt | $G^{250}$ | clayey silt | | |
| | | $H^{30}$ | sandy silt; macroalgae | $D^{30}$ | silt |
| | | | | $A^{15}$ | sandy silt |

roughly estimated the data presented should be considered approximate; they were obtained from a cursory inspection of the sediments' organoleptic properties. The bottom of section III (except station $III^{15}E$) is characterized by a particularly high thickness of sediment in comparison with the stations of section I and II at similar depths. The lack or the presence of only small amounts of muddy sediments in shallow stations of section I and II (except II$^{30}$H) is very conspicuous. Sediments in the deepest stations,

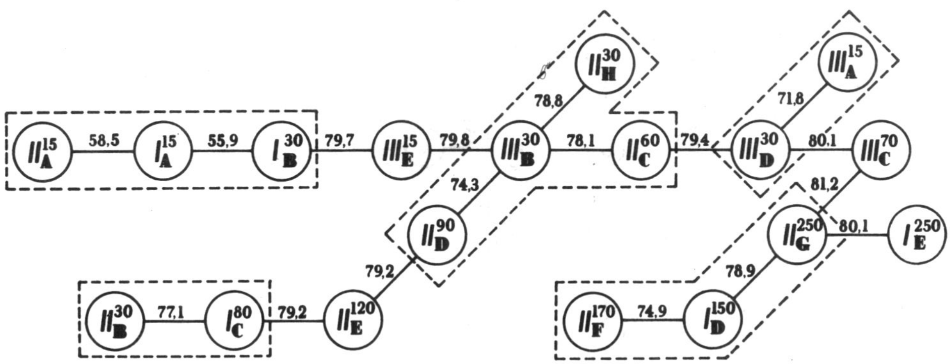


Fig. 2. Dendrite of 18 stations on the background of 61 taxa of *Polychaeta* with its natural division into 9 parts.

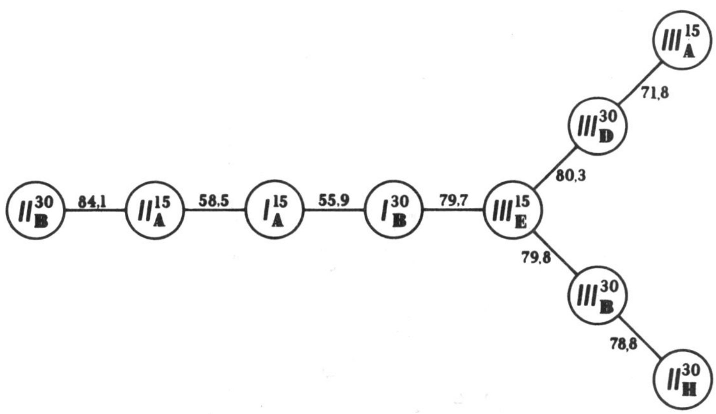


Fig. 3. Dendrite of 9 most shallow stations (depths 15 and 30 m).

first of all those of sections I and II, differ significantly from the other stations. They cover the bottom with layer of clayey consistency, which is hard to be sieved.

The dendrites of stations and species as well as the synthetic diagram (Figs. 2, 3, 4 and 5) constructed according to the scheme proposed by

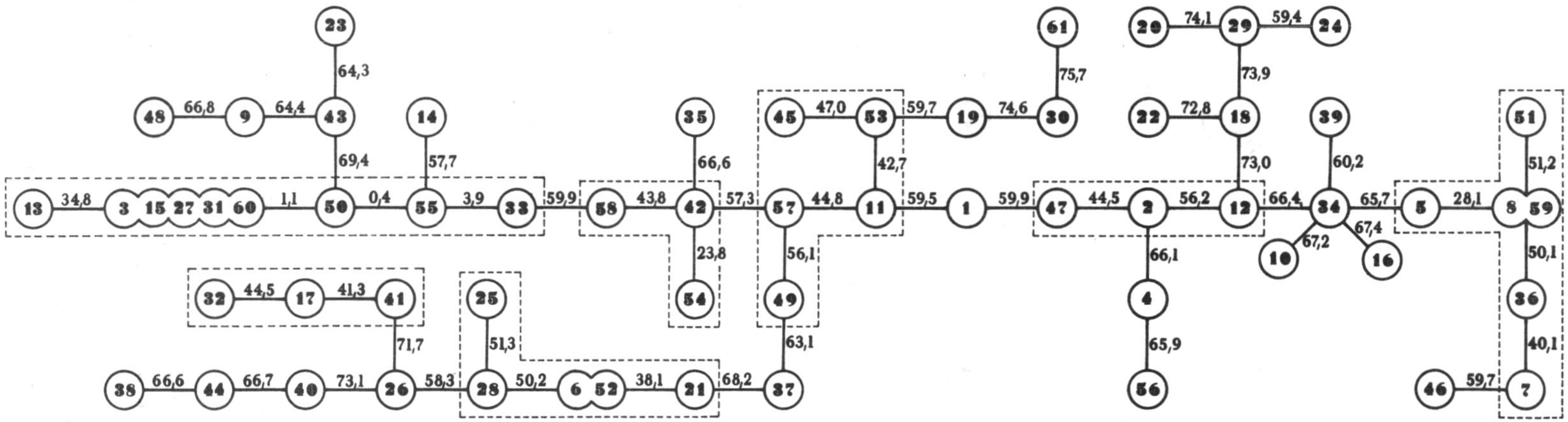

Fig. 4. Dendrite of 61 taxa of *Polychaeta* on the background of 18 stations with its natural division into 34 parts.

Table II

Polychaete taxa collected in 18 stations of three sections in the **Admiralty Bay**. Number of specimens found in three replicate Van Veen samples are given. (*) — two Van Veen samples and (**) — four samples were taken, respectively. A — total number of specimens of each taxon; B — the percentage share of each taxon in the whole material.

| Lp. | Stations / Species | Section I | | | | | Section II | | | | | | | | Section III | | | | | A | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_A^{15}$ | $I_B^{30}$ | $I_C^{80}$ | $I_D^{150}$ | $I_E^{250}$ | * $II_A^{15}$ | ** $II_B^{30}$ | $II_C^{60}$ | $II_D^{90}$ | * $II_E^{120}$ | $II_F^{170}$ | $II_G^{250}$ | $II_H^{3}$ | $III_A^{15}$ | $III_B^{30}$ | $III_C^{70}$ | $III_D^{30}$ | $III_E^{15}$ | | |
| 1 | *Antinoella setobarba* (Monro, 1930) | | | 2 | | 1 | | 1 | | | 1 | | | | | | | | | 5 | 0,085 |
| 2 | *Barrukia cristata* (Willey, 1902) | | | 8 | | 2 | | 3 | 1 | 1 | | 3 | | 1 | 2 | | | 1 | 5 | 27 | 0,459 |
| 3 | *Harmothoe kerguelensis* (MacIntosh, 1885) | | | | | 1 | | | | | | | | | | | | | | 1 | 0,017 |
| 4 | *Harmothoe spinosa* Kinberg, 1855 | | | 5 | | | | | | 1 | | | 1 | | | | | | | 7 | 0,119 |
| 5 | *Harmothoe* sp. | | | | | | | 1 | | | | 2 | | | | | | | | 3 | 0,051 |
| 6 | *Polynoidae* gen. sp. | | | | | | | | | 1 | | | | | | | | | | 1 | 0,017 |
| 7 | *Anaitides patagonica* (Kinberg, 1866) | | | | 2 | | | | | 1 | | 1 | | | | | | | | 4 | 0,068 |
| 8 | *Austrophyllum charcoti* (Gravier, 1911) | | | | | | | | | | | 1 | | | | | | | | 1 | 0,017 |
| 9 | *Exogone heterosetosa* McIntosh, 1885 | | 1 | | | 2 | | | | | | 2 | | | 1 | | | | 2 | 8 | 0,136 |
| 10 | *Neanthes kerguelensis* (McIntosh, 1885) | | | 1 | | | 1 | 3 | | 1 | | 1 | | 3 | | | | | | 10 | 0,170 |
| 11 | *Nerei eugeniae* (Kinberg, 1866) | | | | | 1 | | | | | 1 | | | | | | | | | 2 | 0,034 |
| 12 | *Aglaophamus* sp. | 2 | 2 | 8 | | 1 | 2 | 7 | 2 | 7 | 4 | 3 | 2 | 4 | 2 | 5 | | 1 | 7 | 59 | 1,004 |
| 13 | *Sphaerodoridium antarcticum* (McIntosh, 1885) | | | | | 2 | | | | | | | | | | | 1 | | | 3 | 0,051 |
| 14 | *Sphaerodorum* sp. | | | | | 8 | | | 4 | 2 | | | | | | | | 1 | 2 | 17 | 0,289 |
| 15 | *Glycera* sp. | | | | | 1 | | | | | | | | | | | | | | 1 | 0,017 |
| 16 | *Lumbrineris* sp. | | | 2 | 2 | | | | 1 | 2 | 2 | 9 | 9 | 1 | | 3 | 7 | 2 | | 40 | 0,681 |
| 17 | *Dorvilleidae* gen. sp. | | | | | | | | | | | | | | 2 | | | | | 2 | 0,034 |
| 18 | *Haploscoloplos kerguelensis* (McIntosh, 1885) | 2 | 2 | 6 | | 1 | 59 | 135 | 11 | 38 | 2 | | | 9 | 52 | 178 | 8 | 109 | 81 | 693 | 11,791 |
| 19 | *Scoloplos marginatus* (Ehlers, 1897) | 1 | | | | | 1 | | | 1 | 2 | | | | 1 | | | | | 6 | 0,102 |
| 20 | *Apistobranchus* sp. | | 3 | | | | | | 11 | | | | | 2 | 1 | 12 | | 61 | 4 | 94 | 1,599 |
| 21 | *Aedicira belgicae* (Fauvel, 1936) | | | | | 1 | | | | 16 | | | | | | 1 | | 6 | | 24 | 0,408 |
| 22 | *Paraonis gracilis* (Tauber, 1897) | | | 3 | | 58 | | | 18 | 169 | 15 | 136 | | 5 | | 333 | | 60 | | 797 | 13,561 |
| 23 | *Spiophanes* sp. | | | | | | | 1 | | | | | | | | | | | | 1 | 0,017 |
| 24 | *Tharyx cinncinnatus* (Ehlers, 1908) | | 24 | | | 41 | | | | 2 | 3 | 8 | 11 | | 81 | 10 | 31 | 72 | 25 | 308 | 5,241 |
| 25 | *Tharyx epitoca* Monro, 1930 | | | | | | | | 3 | 7 | | | | 2 | | 3 | | | | 15 | 0,255 |
| 26 | *Brada* sp. | | | | | | | | | 6 | | | | | 3 | 8 | | | 1 | 18 | 0,306 |
| 27 | *Flabelligera* sp. | | | | | 1 | | | | | | | | | | | | | | 1 | 0,017 |
| 28 | *Scalibregma inflatum* Rathke, 1843 | | | | | | | | | 2 | | | 1 | | | 1 | | | | 4 | 0,068 |
| 29 | *Ammotrypane* sp. | | 5 | 1 | | | 2 | 1 | 8 | | 1 | | | 74 | 290 | 59 | 26 | 258 | 27 | 752 | 12,795 |
| 30 | *Travisia kerguelensis* McIntosh, 1885 | 3 | 1 | | | | 5 | | | | | | | | | | | | | 9 | 0,153 |
| 31 | *Sternaspis scutata* (Renier, 1807) | | | | | 1 | | | | | | | | | | | | | | 1 | 0,017 |
| 32 | *Capitella* sp. | | 9 | | | | | | | | | | | | 12 | | | | | 21 | 0,357 |
| 33 | *Notomastus* sp. | | | | | 16 | | | | | | | | | | | | | | 16 | 0,272 |
| 34 | *Lymbriclymenella robusta* Arwidsson, 1911 | | | 3 | 1 | | 2 | 5 | | 4 | 5 | 9 | | | | 1 | | | | 30 | 0,510 |
| 35 | *Maldane sarsi antarctica* Arwidsson, 1911 | | | 3 | 81 | 267 | | | 2 | 2 | 10 | 117 | 232 | | | | 18 | | | 732 | 12,455 |
| 36 | *Nicomache* sp. sensu Monro, 1930 | | | | 1 | | | | | | | 1 | | | | | | | | 2 | 0,034 |
| 37 | *Praxillella kerguelensis* (McIntosh, 1885) | | | | | | 1 | | 1 | 3 | 1 | | | | | | 3 | 1 | | 10 | 0,170 |
| 38 | *Rhodine oveni* Malmgren, 1865 | | | 2 | | 1 | 15 | 12 | | 3 | 7 | 2 | | 1 | 7 | 2 | | 1 | 96 | 159 | 2,705 |
| 39 | *Maldanidae* gen. sp. 1 | | | 17 | 5 | 22 | | 2 | 3 | 10 | 15 | 49 | 5 | | | | | | | 128 | 2,178 |
| 40 | *Maldanidae* gen. sp. 2 | | | | | | | | | | | | | 1 | | 1 | | | 1 | 3 | 0,051 |
| 41 | *Maldanidae* gen. sp. 3 | | | | | | | 1 | | | | | | | 4 | 2 | | | | 7 | 0,119 |
| 42 | *Oweniidae* gen. sp. | | | 2 | 5 | 16 | | | | 1 | 6 | 5 | 10 | | | | | | | 45 | 0,766 |
| 43 | *Amphicteis gunneri antarctica* Hessle, 1917 | | | | | 2 | | 3 | | | | 1 | | | 1 | | | | | 7 | 0,119 |
| 44 | *Anobothrus patagonicus* (Kinberg, 1867) | | | | | | | | | | | | | | | | | | 1 | 1 | 0,017 |
| 45 | *Neosabellides elongatus* (Ehlers, 1912) | | | | 1 | | | | | 4 | 28 | | | | | | | | | 33 | 0,561 |
| 46 | *Phyllocomus crocea* Grube, 1877 | | | | 2 | 1 | | | | | | | | | | | | | | 3 | 0,051 |
| 47 | *Amphitrite kerguelensis* McIntosh, 1876 | | | 8 | 1 | 2 | | 10 | 2 | 1 | 1 | 2 | | 1 | | | | 1 | | 29 | 0,493 |
| 48 | *Lanicides bilobata* (Grube, 1877) | | | | | 1 | | | | | | | 1 | | | | | 1 | 1 | 4 | 0,068 |
| 49 | *Leaena* sp. | | | | | | | | | 1 | 1 | | 1 | | | | 1 | | | 4 | 0,068 |
| 50 | *Pista spinifera* (Ehlers, 1908) | | | | | 4 | | | | | | | | | | | | | | 4 | 0,068 |
| 51 | *Amphitritinae* gen. sp. | | | | | | | | 1 | | | 1 | | | | | | | | 2 | 0,034 |
| 52 | *Artacama proboscidea* Malmgren, 1866 | | | | | | | | | 1 | | | | | | | | | | 1 | 0,017 |
| 53 | *Hauchiella tribullata* (McIntosh, 1869) | | | | | | | | | | 4 | | | | | | | | | 4 | 0,068 |
| 54 | *Thelepus cincinnatus* (Fabricius, 1780) | | | | 2 | 6 | | | | | 2 | 2 | 4 | 1 | | | | | | 17 | 0,289 |
| 55 | *Thelepinae* gen. sp. | | | | | 5 | | | | | | | | | | | | | | 5 | 0,085 |
| 56 | *Terebellides stroemi kerguelensis* McIntosh, 1885 | | | 3 | | 1 | | | | | | | 2 | 4 | | | | | | 10 | 0,170 |
| 57 | *Euchone pallida* Ehlers, 1908 | | | 1 | | 5 | | | | 4 | 4 | | 1 | | | | | | | 15 | 0,255 |
| 58 | *Potamilla antarctica* (Kinberg, 1867) | | | | 15 | 34 | | | | 2 | 3 | 12 | 4 | | | | | | | 70 | 1,191 |
| 59 | *Sabellinae* gen. sp. 1 | | | | | | | | | | | 1 | | | | | | | | 1 | 0,017 |
| 60 | *Sabellinae* gen. sp. 2 | | | | | 1 | | | | | | | | | | | | | | 1 | 0,017 |
| 61 | *Serpulidae* | 490 | 393 | | | | 500 | | | | | | | | | | | | 153 | 1536 | 26,136 |
| | *Polychaeta* non det. | | 6 | | | 11 | 2 | 9 | 4 | 2 | 3 | 4 | 6 | 5 | 7 | 1 | 2 | 1 | | 63 | 1,072 |

Abundance of 61 polychaete taxa (ind./m²) in 18 stations in the Admiralty Bay. The sequence of taxa and stations arranged as in he synthetic iagram (see Fig. 5)

| Species \ Stations | $\mathrm{III}_C^{70}$ | $\mathrm{III}_A^{15}$ | $\mathrm{III}_D^{30}$ | $\mathrm{II}_H^{30}$ | $\mathrm{II}_C^{60}$ | $\mathrm{III}_B^{30}$ | $\mathrm{II}_D^{90}$ | $\mathrm{II}_E^{120}$ | $\mathrm{I}_C^{80}$ | $\mathrm{II}_B^{30}$ | $\mathrm{II}_A^{15}$ | $\mathrm{I}_A^{15}$ | $\mathrm{I}_B^{30}$ | $\mathrm{III}_E^{15}$ | $\mathrm{I}_E^{250}$ | $\mathrm{II}_G^{250}$ | $\mathrm{I}_D^{150}$ | $\mathrm{II}_F^{170}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 *Apistobranchus* sp. | | 3,7 | 225,7 | 7,4 | 40,7 | 44,4 | | | | | | | 11,1 | 14,8 | | | | |
| 29 *Ammotrypane* sp. | 96,2 | 1073,0 | 954,6 | 273,8 | 29,6 | 218,3 | | 5,6 | 3,7 | 2,8 | 11,1 | | 18,5 | 99,9 | | | | |
| 24 *Tharyx cincinnatus* | 114,7 | 299,7 | 266,4 | | | 37,0 | 7,4 | 16,7 | | | | | 88,8 | 92,5 | 151,7 | 40,7 | | 29,6 |
| 32 *Capitella* sp. | | 44,4 | | | | | | | | | | | 33,3 | | | | | |
| 17 *Dorvilleidae* gen. sp. | | 7,4 | | | | | | | | | | | | | | | | |
| 41 *Maldanidae* gen. sp. 3 | | 14,8 | | | | 7,4 | | | | 2,8 | | | | | | | | |
| 26 *Brada* sp. | | 11,1 | | | | 29,6 | 22,2 | | | | | | | 3,7 | | | | |
| 25 *Tharyx epitoca* | | | | 7,4 | 11,1 | 11,1 | 25,9 | | | | | | | | | | | |
| 28 *Scalibregma inflatum* | | | | | | 3,7 | 7,4 | | | | | | | | | 3,7 | | |
| 6 *Polynoidae* gen. sp. | | | | | | | 3,7 | | | | | | | | | | | |
| 52 *Artacama proboscidea* | | | | | | | 3,7 | | | | | | | | | | | |
| 21 *Aeidicira belgicae* | | | 22,2 | | | 3,7 | 59,2 | | | | | | | | 3,7 | | | |
| 16 *Lumbrineris* sp. | 25,9 | | 7,4 | 3,7 | 3,7 | 11,1 | 7,4 | 11,1 | 7,4 | | | | | | | 33,3 | 7,4 | 33,3 |
| 35 *Maldane sarsi antarctica* | 66,6 | | | | 7,4 | | 7,4 | 55,6 | 11,1 | | | | | | 987,9 | 258,4 | 229,7 | 432,9 |
| 46 *Phyllocomus crocea* | | | | | | | | | | | | | | | 3,7 | | 7,4 | |
| 7 *Anaitides patagonica* | | | | | | | 3, | | | | | | | | | | 7,4 | 3,7 |
| 36 *Nicomache* sp. | | | | | | | | | | | | | | | | | 3,7 | 3,7 |
| 59 *Sabellinae* gen. sp. 1 | | | | | | | | | | | | | | | | | | 3,7 |
| 8 *Austrophyllum charcoti* | | | | | | | | | | | | | | | | | | 3,7 |
| 5 *Harmothoe* sp. | | | | | | | | | | 2,8 | | | | | | | | 7,4 |
| 51 *Amphitritinae* gen. sp. | | | | | 3,7 | | | | | | | | | | | | | 3,7 |
| 34 *Lumbriclymenella robusta* | | | | | | 3,7 | 14,8 | 27,8 | 11,1 | 13,9 | 11,1 | | | | | | 3,7 | 33,3 |
| 39 *Maldanidae* gen. sp. 1 | | | | | 11,1 | | 37,0 | 83,4 | 62,9 | 5,6 | | | | | 81,4 | 18,5 | 18,5 | 181,3 |
| 56 *Terebellides stroemi kerguelensis* | | | | 14,8 | | | | | 11,1 | | | | | | 3,7 | 7,4 | | |
| 4 *Harmothoe spinosa* | | | | | | | 3,7 | | 18,5 | | | | | | | 3,7 | | |
| 47 *Amphitrite kerguelensis* | | | 3,7 | 3,7 | 7,4 | | 3,7 | 5,6 | 29,6 | 27,8 | | | | | 7,4 | | 3,7 | 7,4 |
| 2 *Barrukia cristata* | | 7,4 | 3,7 | 3,7 | 3,7 | | 3,7 | | 29,6 | 8,3 | | | | 18,5 | 7,4 | | | 11,1 |
| 12 *Aglaophamus* sp. | | 7,4 | 3,7 | 14,8 | 7,4 | 18,5 | 25,9 | 22,2 | 29,6 | 19,5 | 11,1 | 7,4 | 7,4 | 25,9 | 3,7 | 7,4 | | 11,1 |
| 19 *Scoloplos marginatus* | | 3,7 | | | | | 3,7 | 11,1 | | | 5,6 | 3,7 | | | | | | |
| 1 *Antinoella setobarba* | | | | | | | | 5,6 | 7,4 | 2,8 | | | | | 3,7 | | | |
| 45 *Neosabellides elongatus* | | | | | | | 14,8 | 155,7 | | | | | | | | | 3,7 | |
| 53 *Hauchiella tribullata* | | | | | | | | 22,2 | | | | | | | | | | |
| 11 *Nereis eugeniae* | | | | | | | | 5,6 | | | | | | | | | | |
| 57 *Euchone pallida* | | | | | | | 14,8 | 22,2 | 3,7 | | | | | | 18,5 | 3,7 | | |
| 49 *Leaena* sp. | 3,7 | | | | | | 3,7 | 5,6 | | | | | | | | 3,7 | | |
| 54 *Thelepus cincinnatus* | | | | 3,7 | | | | 11,1 | | | | | | | 22,2 | 14,8 | 7,4 | 7,4 |
| 42 *Oweniidae* gen. sp. | | | | | | | 3,7 | 33,4 | 7,4 | | | | | | 59,2 | 37,0 | 18,5 | 18,5 |
| 58 *Potamilla antarctica* | | | | | | | 7,4 | 16,7 | | | | | | | 125,8 | 14,8 | 55,5 | 44,4 |
| 13 *Sphaerodoridium antarcticum* | 3,7 | | | | | | | | | | | | | | 7,4 | | | |
| 3 *Harmothoe kerguelensis* | | | | | | | | | | | | | | | 3,7 | | | |
| 15 *Glycera* sp. | | | | | | | | | | | | | | | 3,7 | | | |
| 27 *Flabelligera* sp. | | | | | | | | | | | | | | | 3,7 | | | |
| 31 *Sternaspis scutata* | | | | | | | | | | | | | | | 3,7 | | | |
| 60 *Sabellinae* gen. sp. 2 | | | | | | | | | | | | | | | 3,7 | | | |
| 50 *Pista spinifera* | | | | | | | | | | | | | | | 14,8 | | | |
| 55 *Thelepinae* gen. sp. | | | | | | | | | | | | | | | 18,5 | | | |
| 33 *Notomastus* sp. | | | | | | | | | | | | | | | 59,2 | | | |
| 14 *Sphaerodorum* sp. | | | 3,7 | | 14,8 | | 7,4 | | | | | | | 7,4 | 29,6 | | | |
| 37 *Praxillella kerguelensis* | 11,1 | | 3,7 | | 3,7 | | 11,1 | 5,6 | | | 5,6 | | | | | | | |
| 10 *Neanthes kerguelensis* | | | | 11,1 | | | 3,7 | | 3,7 | 8,3 | 5,6 | | | | | | | 3,7 |
| 23 *Spiophanes* sp. | | | | | | | | | | 2,8 | | | | | | | | |
| 43 *Amphicteis gunneri antarctica* | | 3,7 | | | | | | | | 8,3 | | | | | 7,4 | | | |
| 9 *Exogone heterosetosa* | | 3,7 | | | | | | | | | | | 3,7 | 7,4 | 7,4 | | | 7,4 |
| 48 *Lanicides bilobata* | | | 3,7 | | | | | | | | | | | 3,7 | 3,7 | 3,7 | | |
| 18 *Haploscoloplos kerguelensis* | 29,6 | 192,4 | 403,3 | 33,3 | 40,7 | 658,6 | 140,6 | 11,1 | 22,2 | 375,3 | 328,0 | 7,4 | 7,4 | 299,7 | 3,7 | | | |
| 22 *Paraonis gracilis* | | | 222,0 | 18,5 | 66,6 | 1232,1 | 625,3 | 83,4 | 11,1 | | | | | | 214,6 | | | 503,2 |
| 40 *Maldanidae* gen. sp. 2 | | | | 3,7 | | 3,7 | | | | | | | | 3,7 | | | | |
| 44 *Anobothrus patagonicus* | | | | | | | | | | | | | | 3,7 | | | | |
| 38 *Rhodine loveni* | | 25,9 | 3,7 | 3,7 | | 7,4 | 11,1 | 38,9 | 7,4 | 33,4 | 139,0 | | | 355,2 | 3,7 | | | 7,4 |
| 30 *Travisia kerguelensis* | | | | | | | | | | | 27,8 | 11,1 | 3,7 | | | | | |
| 61 *Serpulidae indet.* | | | | | | | | | | | 2780,0 | 1813,0 | 1454,1 | 566,1 | | | | |

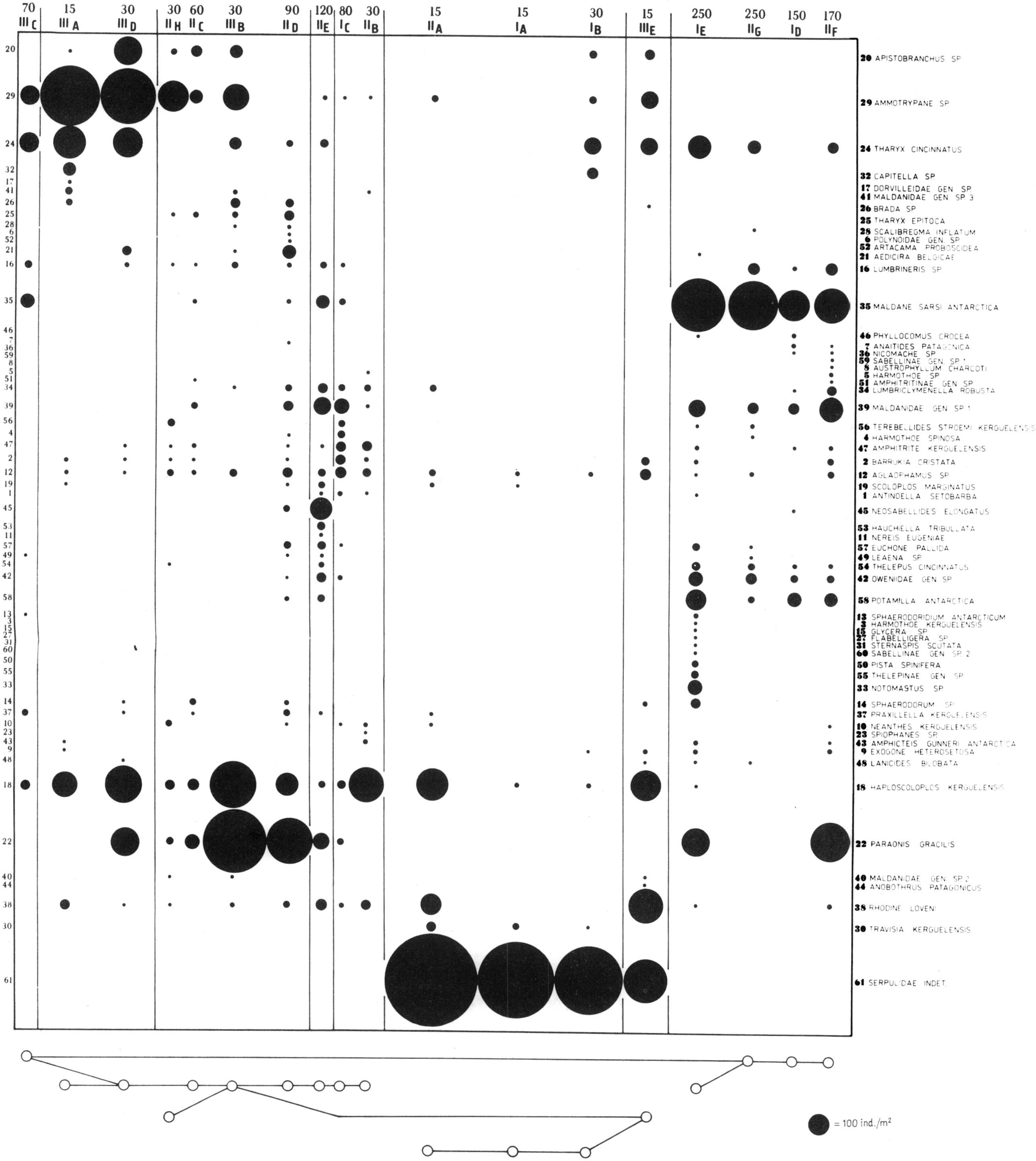


Fig. 5. Synthetic diagram of the relations between 61 taxa of *Polychaeta* and 18 stations of all three sections in the Admiralty Bay. The area of the circles corresponds to the abundance of particular taxa.

Romaniszyn (1970) were the basis of the analysis of *Polychaeta* assemblages.

Affinities between stations and species were calculated on the basis of the number of specimens of particular species per 1 $m^2$ (Tab. III). For calculation of the affinity the formula of Marczewski and Steinhaus (1959) was used

$$s = \frac{w}{a+b-w}$$

where "a" and "b" stand for the elements of the compared sets and "w" stands for the elements common for both sets. In the present paper the mutual affinity of species and stations is replaced by the distances (in %)

$$r = (1-s)\ 100$$

where "r" stands for the distance and "s" for the affinity.

The construction and natural division of the dendrites were carried out with the method by Florek et al. (1951).

In all figures taxa are always denoted by the same number as in tab. II.

## 3. Results

The collected material (Table II) comprised 5877 specimens of *Polychaeta* which belong to 61 taxa (the representatives of the family Serpulidae were not identified). Further 63 specimens, being damaged, were not determined, and, consequently, they were not included in the analysis. In the material investigated, *Serpulidae*, which in great numbers inhabit stones in certain shallow stations were dominant.

The following taxa were very abundant: *Paraonis gracilis* (13,6% of all *Polychaeta* collected), *Ammotrypane* sp. (12,8%), *Maldane sarsi antarctica* (12,5%) and *Haploscoloplos kerguelensis* (11,8%). *Tharyx cincinnatus* (5,2%), *Rhodine loveni* (2,7%) and *Maldanidae* gen. sp. 1 (2,2%) were abundant. The shares of *Apistobranchus* sp. (1,6%), *Potamilla antarctica* (1,2%) and *Aglaophamus* sp. (1,0%) were also cinsiderable.

Out of the seven possible natural divisions of the dendrite of stations the dendrite in which grouping of sites takes place when they are connected by a distance not exceeding 78,9% was chosen for analysis (Fig. 2). Although the division is mathematically weak it seems well justified from the biological point of view. Moreover it is only slightly weaker from one of the stronger divisions, that groups stations the distance between which does not exceed 78,1%, and it retains the same groups of stations and does not distinguish stations $II^{30}H$ and $II^{250}G$ as separate clusters. Note that in one of the mathematically strongest divisions (second in order) very coherent groups, with very specific assemblages of *Polychaeta,* are built up of stations: $II^{15}A$ — $I^{15}A$ — $I^{30}B$ and $III^{15}A$ — $III^{30}D$ (Figs. 2 and 5).

Assemblages of *Polychaeta* which are characteristic for given groups of stations are as follows (Figs. 2 and 5, Tab. III):

In stations $III^{15}A$ and $III^{30}D$ the dominant species *Ammotrypane* sp. and *Tharyx cincinnatus* are most characteristic. They have the highest density in these stations. This is also true to a certain degree in the case of *Apistobranchus* sp., which, however, is abundant only in station $III^{30}D$. *Haploscoloplos kerguelensis,* a species characteristic for shallow areas of the bottom of the Ezcurra Inlet, is also rather abundant in the group of stations discussed. The rest of the assemblage consists of scarce and mostly eurytopic species.

Station $III^{70}C$ is the deepest investigated station of the section III. As follows from the situation of this station in the dendrite (Fig. 2), it is well distinguished. In terms of the composition and abundance of *Polychaeta* it is similar to its neighbouring station $III^{30}D$ on the one hand (*Ammotrypane* sp. and *Tharyx cincinnatus* are quite abundant and dominant here), and to the deepest localities of the whole investigated area on the other hand. At a low specific variability of the assemblage, *Maldane sarsi antarctica*, a species very typical of the greatest depths, is an important component of this assemblage.

Station $III^{15}E$, as it was in the case of the previously discussed station, in each possible division of the dendrite constitutes a separate group, resulting from a high specifity of the assemblage of *Polychaeta* there recorded. Nevertheless station $III^{15}E$ displays the highest similarity to the group of stations $I^{30}B$ — $I^{15}A$ — $II^{15}A$. The most characteristic were: *Serpulidae, Rhodine loveni,* (the dominant species whose abundancy in this place was the largest) and *Haploscoloplos kerguelensis,* whose presence, together with slightly less abundant *Ammotrypane* sp. and *Tharyx cincinnatus* makes the assemblage similar to polychaete assemblage of other shallow stations of the section III.

Stations $II^{15}A$ — $I^{15}A$ — $I^{30}B$ form a very compact group, which is caused by very abundant occurrence of Serpulidae in this place on the one hand, and by very low diversity on the other. The characteristic species, recorded only in this group of stations is *Travisia kerguelensis.* This highly specific structure and composition of polychaete assemblage are related to the type of the substrate. The discussed stations were the only ones where the bottom is sandy, or sandy and slightly muddy with some scattered stones.

The group of stations $II^{250}G$ — $I^{150}D$ — $II^{170}F$ includes the deepest stations of sections I and II. The most characteristic feature of this assemblage is a strong dominance of *Maldane sarsi antarctica.* Its constant components were also: *Maldanidae* gen. sp. 1, *Thelepus cincinnatus, Oweniidae* gen. sp. and *Potamilla antarctica.*

Station $I^{250}D$ in respect to the composition and structure of its polychaete assemblage was very similar to the group of stations $II^{250}G$ — $I^{150}D$ — $II^{170}F$, and it is combined with these stations in one group in the synthetic diagram (Fig. 8). However in each possible division of the dendrite of stations it is distinguished as a separate group. This is due to the presence of a group of species, usually not numerous, but occuring only in this station. These species were: *Sphaerodoridium antarcticum, Harmothoe kerguelensis, Glycera* sp., *Flabelligera* sp., *Sternaspis scutata, Sabellinae* gen. sp. 2, *Pista spinifera, Thelepinae* gen. sp. and *Notomastus* sp. It seems that these species can be more typical of greater depths of the main basin of the bay, while in the presently discussed station they approach the upper limit of their occurence. This is also supported by the fact that none of these species was recorded at similar depth of section II.

Three groups of stations: $II^{30}H$ — $II^{60}C$ — $III^{30}B$ — $II^{90}D$; $II^{120}E$ and $I^{80}C$ — $II^{30}B$, were characterized by a low specifity of polychaete assemblages. Therefore the interpretation difficulties appear. The central position is occupied by station $II_E^{120}$, to which the other two groups are related, in terms of composition and domination structure of species. In the case of the presently discussed theree groups of stations we have to do with a situation indicating to the presence of some trends in changes in polychaete assemblages, which are related to the increasing depth on the one hand, and to the changing character of the bottom on the other.

These trends manifest themselves in decrease in the dominance of shallow-water forms of strongly muddy bottom (*Ammotrypane* sp. and *Haploscoloplos kerguelensis*), in more balanced structure of dominance and in an increase in the number of species. An effect of these trends is the situation occuring in station $II^{120}E$, established below the zone of macroalgae. *Neosabellides elongatus,* for which such depths seem to be the most typical, is here the most abundant species. Also, a group of taxa typical of deeper parts of the bottom of the studied area has been recorded; they are: *Euchone pallida, Thelepus cincinnatus, Oweniidae* gen. sp., *Potamilla antarctica* and *Maldanidae* gen. sp. 1. *Maldane sarsi antarctica* is also present although it is here less abundant than in deeper stations. Shallow-water *Ammotrypane* sp. and *Haploscoloplos kerguelensis* are here clearly recessive species. From the above discussion it also follows that depths between (60) 80 and 120 m constitute a transition zone between the shallower and the deeepest part of the bottom. This refers to section I and II.

From the analysis of the diagram (Fig. 5) it follows that the assemblages of *Polychaeta* occurring in deepest stations are very stable in regard to species composition and dominance structure (cluster of stations $II^{250}G$,

$I^{150}D$, $II^{170}F$; Fig. 5). On the contrary, in the shallowest stations (15—30 m) polychaete assemblages vary considerably. It seems that the character of sediment is the main factor affecting the character of the assemblage.

The dendrite in Fig. 3 presents a combination in which all stations of the depths of 15 and 30 m were connected by means of shortest possible distances (highest affinities). It is interesting that the shallow stations of sections I and II (with dominant *Serpulidae* and characteristic *Travisia kerguelensis*) are grouped on its left side, on the right, on the other hand, the stations of section III and one station of section II. Station $III^{15}E$ occupies the central position of this dendrite; the assemblage of *Polychaeta* of this station is similar to both the stations on its left side (*Serpulidae* are the dominant polychaetes and *Rhodine loveni* is quite abundant) and on its right side (very abundant *Haploscoloplos kerguelensis* and rather abundant *Ammotrypane* sp. and *Tharyx cincinnatus*). Such a configuration of stations within this dendrite, conditioned by the affinity among the assemblages of *Polychaeta*, is clearly connected with the intensity of the inflow of suspended mineral matter from land (Fig. 1). Consequently, the station $II^{30}H$, the only one of section II, happened to occur on the right side of the dendrite because it was situated in a place where considerable inflow of suspended matter from the Urbanek Crag occurred. Stations of section III are influenced by similar inflow from Herve Cove and Monsiment Cove.

Analysing the polychaete fauna of stations $II^{15}A$, $I^{15}A$, $I^{30}B$, $III^{15}E$, $III^{30}B$, $III^{30}D$ and $III^{15}A$, it is possible to determine the trends of change in assemblages depending on the degree to which bottom is silted up. The changes occur according to the following pattern:

1. Stations $II^{15}A$ — $I^{15}A$ — $I^{30}B$: Serpulidae are dominant and *Travisia kerguelensis* is present; there are very few species.
2. Station $III^{15}E$: decrease in the dominance of *Serpulidae, Rhodine loveni* very abundant, increase in the abundance of *Haploscoloplos kerguelensis*.
3. Station $III^{30}B$: *Serpulidae* are yielding to other species, further increase in the abundance of *Ammotrypane* sp. and *Apistobranchus* sp., the dominance of *Paraonis gracilis* and *Haploscoloplos kerguelensis*, a clear decrease in the abundance of *Rhodine loveni*.
4. Station $III^{15}A$ and $III^{30}D$: further increase in the abundance of *Ammotrypane* sp., the dominance of this species, increase in the abundance of *Apistobranchus* sp. and *Tharyx cincinnatus* together with decrease in the abundance of *Haploscoloplos kerguelensis* and *Paraonis gracilis*.

The natural division of the dendrite of species (Fig. 4) distinguishes certain groups. These groups consist of species of strong cenological affinity, i.e. those which display a tendency to occur together. Some of them deserve attention. *Barrukia cristata* and *Amphitrite kerguelensis* form a group of eurytopic species which were recorded in most stations investigated,

Table IV

Numbers of *Maldane sarsi antarctica* in single Van Veen samples taken in depths 150–250 m

| Depth (m) | 150 | 170 | 170 | 150 | 170 | 250 | 250 | 250 | 250 | 250 | 250 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of specimens in single Van Veen sample | 30 | 42 | 30 | 43 | 45 | 88 | 104 | 78 | 95 | 50 | 84 |

irrespectively of depth and sediment character. *Aglaophamus* sp., the commonest species in the research area, is connected with them, and it was also present in the group of shallowest and non-silted stations $II^{15}A$ — $I^{15}A$ — $I^{30}B$, where two similary common species of the Admiralty Bay — *B. cristata* and *A. kerguelensis* — were not recorded. *Aglaophamus* sp. was not recorded in only two stations.

The other group of cenologically closely related taxa form *Thelepus cincinnatus, Oweniidae* gen. sp. and *Potamilla antarctica,* which occur together and in similar densities at depths 120—250 m. *Maldane sarsi antarctica* is connected with them, however, this species has a higher environmental plasticity and occurs in great abundance at greater depths (150—250 m).

## 4. Discussion

In Western Antarctica there have already been carried out investigations of the soft bottom benthic assemblages (Gallardo, Castillo 1969, Gallardo et al. 1977, Lowry 1975, Richardson and Hedgpeth 1977) which makes it possible to compare obtained results of research. From Richardson and Hedgpeth's (1977) juxtaposition, which groups the dominant benthic species of the Arthur Harbor, it follows that there exists high affinity between the fauna of *Polychaeta* of this area and the *Polychaeta* assemblages recorded in the shallow stations of section III. This is mainly a result of the presence of dominant species: *Ammotrypane* sp., *Haploscoloplos kerguelensis, Paraonis gracilis* and *Tharyx cincinnatus,* and, to lesser degree, of *Apistobranchus* sp. and *Rhodine loveni*. The last of the above mentioned species, although rather abundant in the area studied, is very abundant only in certain places (e.g. station $III^{15}E$), contrary to Arthur Harbor, where it is very abundant at depths ranging from 5 to 43 m (Richardson and Hedgpeth 1977). It ensues from the data of these authors that in Arthur Harbor *Rhodine loveni* is most abundant at the smallest depths (station 7, 5—7 m) in bottom consisting of sand and silt, and its abundance decreases together with increase in water depth. Similar relations are observed in the Admiralty Bay (Tab. II, Fig. 5). There are few localities with such a type of sediment in the studied area which explains the lower abundance of this species in comparison with Arthur Harbor. Lowry (1975) recorded in Arthur Harbor the species *Apistobranchus typicus*. Our *Apistobranchus* sp., most probably, is the same species, although it is neither as abundant or so common as in Arthur Harbor, where in certain places it is the dominant benthic species (Lowry 1975). Despite these differences, probably brought about by local differences in the character of sediment, considerable affinity between the fauna of *Polychaeta* of the two areas in question is very clear. However, it is much smaller between the fauna of *Polychaeta* of Arthur Harbor and shallow localities of sections I and II in the Admiralty Bay i.e. in the main basin of the bay, where sandy bottom with, at best, small amounts of silt sediment dominates. Thus, it is only the innermost part of the Admiralty Bay — Ezcurra Inlet — where there are conditions similar to these which occur in the bottom around the Palmer Station. Thick, muddy sediments of the bottom, formed probably by an intensive inflow of suspended matter from land, is probably the major factor determining the composition and structure of the bottom fauna of these areas.

Gallardo and Castillo (1969) and Gallardo et al. (1977) pointed out to the differences in the composition and structure of benthic assemblages of Chile Bay (Greenwich Island) above and below the 100 m isobath; at greater depths they recorded the dominance of *Maldane sarsi antarctica* (*Maldane* — assemblage). Although in the Admiralty Bay the dominance of this species begins deeper, there is no doubt that the dominance of this species constitutes a very characteristic feature of the assemblages of deeper bottom fauna (see also Jażdżewski et al. 1986) which, in the case of *Polychaeta* occurs together with high homogeneity of these assemblages. This manifests itself particularly conspicuously in the distribution of the dominant *Maldane sarsi antarctica*. In 11 single samplings with the Van Veen sampler, at depths 150—250 m, the following numbers of specimens of this species were recorded (Tab. IV).

The eveness of the distribution is particularly high within two depth ranges: 150—170 m and 250 m.

The peculiar character of section III as shown by *Polychaeta* refers also to other groups of the benthos. Similarly Jażdżewski et al. (1986) recorded certain peculiarity in the fauna of this shallowest part of the bay. This community was characterized by the extraordinary high share of *Tanaidacea* and *Cumacea* in shallow stations (15—30 m). It follows from the analysis of these authors that the exceptional position of station III$^{15}$E is caused by high dominance of small *Gastropoda*, that are nearly absent in other stations. This is a further support of its separate position resulting from the division of the dendrite (Fig. 2). Among *Polychaeta, Rhodine loveni* is most abundant in this station.

A comparison of the faunas of *Polychaeta* of the Admiralty Bay, Arthur Harbor and Chile Bay allows us to assume that the polychaete fauna is very similar in the whole area of the Antarctic Peninsula and neighbouring archipelagoes. This assumption agrees with the conclusions of Knox and Lowry (1977), which point out a high affinity between the fauna of *Polychaeta* of the Scotia Arc and the Antarctic Peninsula, including particularly South Shetland Islands and the Antarctic Peninsula.

## 5. Conclusions

1. A high variability in the assemblages of *Polychaeta* was observed in the shallowest stations of the investigated area (depth: 15—30 m).
2. Differences in the structure of these assemblages are clearly related to the inflow of suspended matter from land that makes the bottom silty.
3. A clear peculiarity of the assemblages of *Polychaeta* of section III in comparison with those of sections I and II was recorded.
4. The structure of the polychaete assemblage of the innermost investigated part of the bay (Ezcurra Inlet, section III) displays considerable affinity to the fauna of *Polychaeta* in Arthur Harbor (Anvers Island) investigated by Richardson and Hedgpeth (1977).
5. Gradual changes in the structure of polychaete assemblages were observed within the range of depth from (60) 80 to 120 m.
6. The final effect of these changes is the situation occurring in the group of deepest stations (150—250 m), where due to the dominance of *Maldane sarsi antarctica,* these assemblages display a high affinity to the *Maldane*-assemblage of Chile Bay (Greenwich Island) (Gallardo, Castillo 1969, Gallardo et al. 1977) recorded there below the 100 m isobath.

## 6. Резюме

На 18 станциях, расположенных на глубине 15—250 метров вдоль трех разрезов в бухте Адмиральти (о. Кинг Джордж, Южные Шетландские о-ва) в сезоне летним 1979/80 года были собраны количественные пробы дночерпателем Ван Вина с хватательной поверхностью 0,09 м$^2$. На каждой станции три такие зачерпнения составляли одну пробу, считаемую за одно целое. Основой анализа скоплений Polychaeta были дендриты станций и видов (рис. 2, 4) и синтетическая диаграмма (рис. 5) (Романишин 1970).

Среди 5877 собранных особей, принадлежащих к 61 таксонам, наиболее многочисленными были *Selpulidae*. К видам очень многочисленным принадлежали: *Paraonis gracilis, Ammotrypane* sp., *Maldane sarsi antarctica* и *Haploscoloplos kerguelensis*. Довольно многочисленными были: *Tharyx cincinnatus, Rhodine loveni* и *Maldane* gen. sp. 1. Наиболее распространенными оказались *Aglaophamus* sp., *Barrukia cristata* и *Amphitrite kerguelensis*.

Разделение дендрита дало возможность выделить группы станций с характерными скоплениями *Polychaeta* (рис. 2, 5). Для мелких, сильно занесенных илом станций $III_A^{15}$—$III^{30}$ характерными были очень многочисленные *Ammotrypane* sp. и *Tharyx cincinnatus*. Для станции $III_C^{70}$, составляющей отдельное скопление, была определена своеобразная группировка, своим характером напоминающая с одной стороны фауну других станций этого разреза, а с другой — наиболее глубоких станций I и II разрезов. Очень компактную группу составляли станции $II_A^{15}$—$I_A^{15}$—$I_B^{30}$, где на песчаном или слабо заиленном дне обнаружено скопление с доминированием *Serpulidae* и характерным представителем — *Travisia kerguelensis*. Наиболее важной чертой скопления на станции $III_E^{15}$ было большое количество *Rhodine loveni*. Самые глубокие станции разрезов I и II (глубина 150—250 м) образуют группу, в которой решительным образом преобладал *Maldane sarsi antarctica*, а постоянными членами были *Maldanidae* gen. sp. 1, *Thelepus cincinnatus, Oweniidae* gen. sp. и *Potamilla antarctica*. Скопления *Polychaeta* самых мелких станций (15—30 м) характеризовались большим разнообразием, что связано, вероятно, со степенью занесения дна илом. Характер такого скопления находится в явной связи со сносом суспензии с берега. Преобладание *Serpulidae* и постоянное присутствие *Travisia kerguelensis* обнаружено в станциях разрезов I и II с незаиленным дном, в то время как в сильно заиленном разрезе III в большом количестве наблюдались *Ammotrypane* sp., *Tharyx cincinnatus* и *Apistobranchus* sp.

Скопления *Polychaeta*, обнаруженные в фиорде Эзкурра (разрез III), являются очень похожими на описанные Ричардсоном и Хеджпетом (1977) скопления Артур Харбор (о. Анверс). Как и в бухте Чили (о. Гринвич) ниже изобаты 100 м (Галлардо, Кастилло 1969, а также Галлардо и др. 1977), так и в бухте Адмиральти на самых больших глубинах (150—250 м) в скоплениях Polychaeta и вообще бентоса доминирует многочисленный *Maldane sarsi antarctica*.

# 7. Streszczenie

W 18 stanowiskach (o głębokości od 15 do 250 m) rozmieszczonych wzdłuż trzech przekrojów wyznaczonych w Zatoce Admiralicji (Wyspa Króla Jerzego, Szetlandy Południowe) (rys. 1) w sezonie letnim 1979/80 roku pobrano próby ilościowe chwytaczem Van Veena o powierzchni chwytnej 0,09 m$^2$. W każdym stanowisku trzy zaczerpnięcia stanowią jedną próbę, traktowaną w pracy jako niepodzielną całość. Podstawą analizy zgrupowań *Polychaeta* były dendryty stanowisk i gatunków (rys. 2, 4) oraz diagram syntetyczny (rys. 5) (Romaniszyn 1970).

Wśród 5877 zebranych osobników, należących do 61 taksonów najliczniejsze były *Serpulidae*. Do gatunków bardzo licznych należały: *Paraonis gracilis, Ammotrypane* sp., *Maldane sarsi antarctica* i *Haploscoloplos kerguelensis*. Dość liczne były: *Tharyx cincinnatus, Rhodine loveni* i *Maldanidae* gen sp. 1. Najpospolitszymi w terenie badań okazały się: *Aglaophamus* sp., *Barrukia cristata* i *Amphitrite kerguelensis*.

Podział dendrytu wyodrębnił grupy stanowisk z charakterystycznymi zgrupowaniami *Polychaeta* (rys. 2, 5). W płytkich, silnie zamulonych stanowiskach $III_A^{15}$ — $III_D^{30}$ najbardziej charakterystycznymi były bardzo liczne *Ammotrypane* sp. i *Tharyx cincinnatus*. W stanowisku $III_C^{70}$, tworzącym osobne skupienie, stwierdzono swoiste zgrupowanie, swym charakterem nawiązujące z jednej strony do fauny innych stanowisk tego przekroju, z drugiej zaś do najgłębszych stanowisk przekroju I i II. Bardzo zwartą grupę tworzą stanowiska $II_A^{15}$ — $I_A^{15}$ — $I_B^{30}$, gdzie na piaszczystym lub słabo zamulonym dnie stwierdzono zgrupowanie zdominowane przez *Serpulidae* i którego charakterystycznym składnikiem był *Travisia kerguelensis*. Najistotniejszym rysem zgrupowania w stanowisku $III_E^{15}$ była duża liczebność

*Rhodine loveni*. Najgłębsze stanowiska przekroju I i II (głębokość 150—250 m) tworzą grupę, w której zdecydowanym dominantem był *Maldane sarsi antarctica*, zaś stałymi składnikami były *Maldanidae* gen. sp. 1, *Thelepus cincinnatus*, *Oweniidae* gen. sp. i *Potamilla antarctica*. Zgrupowania *Polychaeta* stanowisk najpłytszych (15—30 m) odznaczają się dużą różnorodnością, co jest zapewne związane ze stopniem zamulenia dna. Charakter zgrupowań jest w wyraźnym związku ze spływem zawiesiny z lądu. Dominację *Serpulidae* i stałą obecność *Travisia kerguelensis* stwierdzono w stanowiskach przekroju I i II o dnie niezamulonym, zaś w silnie zamulonych stanowiskach przekroju III dużą liczebność uzyskują *Ammotrypane* sp., *Tharyx cincinnatus* i *Apistobranchus* sp.

Zgrupowania *Polychaeta* stwierdzone we Fiordzie Ezcurra (przekrój III) są bardzo podobne do opisanych przez Richardsona i Hedgpetha (1977) z Arthur Harbor (Anvers Island). Podobnie jak w Chile Bay (Greenwich Island) poniżej izobaty 100 m (Gallardo, Castillo 1969 oraz Gallardo i inni 1977), tak i w Zatoce Admiralicji na największych badanych głębokościach (150—250 m) w zgrupowaniach *Polychaeta* i bentosu w ogóle dominuje bardzo liczny *Maldane sarsi antarctica*.

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