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論　　文

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Characteristics of soil invertebrates in reed beds of acidic-river flowing into Lake Inawashiro in northeastern Japan

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Abstract

The objective of this study was to investigate the relationships between soil properties, particularly pH, and soil mesofauna in reed beds of acidic river. The study was performed in October, November, and December 2018 at three sites: two upstream and one downstream of the confluence of the Nagase and Sukawa Rivers, which flow into Lake Inawashiro in northeastern Japan. Soil properties measured included moisture content, pH, total nitrogen, total carbon, C/N ratio, total iron, total aluminum, and exchangeable aluminum. Mesofauna were investigated using two methods: five groups via the wet funnel method (O'Connor method) and nine groups via the dry funnel method (Tullgren method). Five genera of Enchytraeidae and nine families of Oribatida were identified. Soil properties varied as follows: pH 3.5–6.1; moisture content (December) 12%–79%; total nitrogen 0.02%–0.51%; total carbon 0.25%–10.55%; C/N ratio 13.72–28.17; total iron 2.97%–4.17%; total aluminum 1.13%–4.25%; and exchangeable aluminum <0.001%–0.06%. No clear correlation was found between any measured soil property and either the total number of individuals or the abundance of specific mesofaunal groups. Three enchytraeid genera and eight oribatid families were recorded from extremely acidic soils (pH 3.5–3.6), while five enchytraeid genera and three oribatid families were found in soils often submerged by acidic running water. The enchytraeid genera *Achaeta*, *Fridericia*, and *Lumbricillus*, along with the oribatid taxa Phthiracaridae, *Oppiella nova* (Oudemans) (Oribatida: Oppiidae), and *Tectocepheus velatus* (Michael) (Oribatida: Tectocepeidae), were observed in both extremely acidic soils and soil often submerged by acidic running water, with *Achaeta* and *T. velatus* being particularly abundant. This study presents the first records of the enchytraeids *Cernosvitoviella* sp. and *Lumbricillus lineatus* (O.F. Müller) (Oligochaeta: Enchytraeidae), as well as the order Oribatida, in the riparian areas of the rivers flowing into Lake Inawashiro.

Key words: Acidic river・Enchytraeidae・Floodplain・Oribatid・Reed bed

1. Introduction

Acidic rivers and their high contents of Al and Fe in volcanic regions in Japan are a major subject of study in the branch of earth science that deals with volcanos[1]. The dominant invertebrates in acidic rivers may be different from those in rivers with neutral pH. Thirty-four species of benthonic animals were reported in an acid area of the Nagase River; these animals were not found in a neutral area[2]. However, the ecology of acidic rivers (e.g. soil invertebrate community structure of riparian areas) is not fully understood. The Nagase River is the major river flowing into Lake Inawashiro, northeastern Japan. The river becomes strongly acidic after its confluence with the Sukawa River, because the Sukawa River is very acidic (pH 3.1 in 2018) [3, 4] as a result of inflow of acidic thermal water and mining drainage from Mt. Adatara. The riparian ecology in the Nagase and Sukawa rivers is characterized by patchy reed beds [mainly *Phragmites australis* (Cav.) Trin. Ex Steud.]. The reed beds are occasionally submerged by extremely acidic running water.

Reeds and other aquatic plants are known to exhibit a capacity for water purification[5, 6]. Such riparian areas are thought to be ecotones (at the terrestrial-aquatic interface), and their importance as determinants of the biotic composition of ecosystems has been emphasized[7, 8]. Riparian vegetation has an important role as a source of organic matter through its litter fall[9] and decomposition of reed litter depends on faunal involvement[10, 11]. More attention should be paid to the decomposition of leaf litter within riparian vegetation.

Various soil animals have been recorded in flooded acid soils[12-14]. Soil animals are thought to be affected by the pH value and water content of the soil. In Irish wetlands, pH was found to be an important environmental factor for

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enchytraeid distribution[12]. Acidification (liming) was reported to be associated with increased numbers of specific collembolans, but the numbers of mites did not change[15]. Beylich and Graefe (2002)[16] described how soil moisture is the main abiotic factor influencing the occurrence of annelids, which do not possess protective structures against evaporation, but for which an excess of water may also be harmful. Didden (1993)[17] documented that enchytraeids are vulnerable to drought and therefore confined to moist habitats. Experimental studies revealed remarkable survival abilities of terrestrial oribatid species through long inundations[18]. Zinkler (1999)[19] proposed four possible mechanisms allowing oribatids to survive periods of inundation.

The taxonomic composition of macroinvertebrate assemblages changes markedly along a horizontal transect from open water toward the shore[11]. Soil faunal abundance was highest on the water edge and decreased when the distance from lake increased[20]. The objective of the present study was to assess the influence of acidic water on soil mesofaunal diversity in reed-covered riparian areas.

2. Materials and Methods

2.1. Site descriptions

The major river flowing into Lake Inawashiro is the Nagase River[21] which originates from Lake Hibara. It flows through a vast paddy field at Inawashiro Town. The water of Nagase River becomes strongly acidic after the confluence with the tributary, Sukawa River, because the Sukawa River is extremely acidic (pH 3.1 in 2018)[3, 4] due to volcanic and industrial activities. Sampling was carried out at three reed-bed stations (Fig. 1): the Nagase River before its confluence with the Sukawa River (St. 1); the Sukawa River (St. 2); and the Nagase River after the confluence (St. 3). St. 1 and St. 2 are rarely flooded by neutral water and extremely acidic water, respectively. St. 3 is often submerged by acidic water as a result of discharge from the dam control center (pH 5.77 in 2005)[21].

2.2. Sampling and analytical procedures

Soil samples were collected in October, November, and December 2018, using a 100-mL soil corer (5 cm diameter; ca. 19.6 cm^2 surface area). The sampling depth was 5.1 cm, and sampling included the litter layer. Following Fujikawa (1970[22], proposed by Allee et al. 1949[23]), October belongs to autumn and November and December to winter based on the analysis of weather data from 1998 to 2017, which were obtained from the automated weather station of the Japan Meteoroidal Agency in Inawashiro[24]. During these months, the reeds had withered almost completely. Rainfall and snowfall data were only recorded at sampling and previous days of December[24]. Sampling season and depth were based on the previous study[22, 25-28].

Because of the differing widths of each riparian area (St. 1, ca. 2.0 m; St. 2, ca. 5.0 m; St. 3, ca. 14 m), the sampling was conducted at three plots. At each locality, the three sampling plots are referred to as N (the edge of the reed bed adjacent to the river stream), M (the middle), and F (the edge of the reed bed furthest from the river stream) (Table 1).

Mesofauna were extracted by the wet funnel method (modified O'Connor method[29]) and the dry funnel method (modified Tullgren method[30]). In this study, the mesofauna extracted by the wet funnel was called the 'wet' mesofauna and the 'dry' mesofauna by the dry funnel. Prior to extraction, the soil was kept cool during transportation and then stored in a refrigerator at ca. 4℃. Wet mesofauna was transferred to water-filled Petri dishes and identified under a light microscope. Dry mesofauna was stored in ethanol-filled vials and identified under a light microscope. Where mesofauna except enchytraeids and oribatids occurred, their presence was noted but they were not identified further than group level.

Soil moisture content in December was estimated gravimetrically by drying the sample at 105℃ for 24 h. The soil pH values in air-dried soil samples were analyzed by Environmental Science Research Niigata (Tsubame, Japan). Soil pH was measured in a 1:2.5 soil-to-water suspension using a pH meter (HM-30R, DKK-TOA Corporation, Tokyo, Japan). The levels of total carbon (TC), total nitrogen (TN), total iron (TFe), total aluminum (TAl), and exchangeable aluminum (EAl) in air-dried soil samples that were sampled in October, November, and December 2018, on the same dates as the soil fauna survey, were analyzed by Katakura & Co-op Agri Corporation (Tokyo). Yoshida et al. (1977)[31] reported that soil acidification by acidic water causes increase of EAl contents and iron leaching. Excess H^+ ions in acidic waters with pH lower than 4.5 leads to a sharp increase in the concentration of toxic aluminum ions (Al^{3+}) in the soil solution[32]. TC and TN were measured by the dry combustion method using an organic elemental macro analyzer (MACRO CORDER JM1000CN; J-SCIENCE LAB Co., Ltd., Kyoto, Japan). According to Yamasaki (1997)[33], TFe were measured using the H_2SO_4–HNO_3–$HClO_4$ digestion method followed by atomic absorption spectrometry with an atomic absorbance spectrophotometer (Z-2310; Hitachi High-Tech Corporation, Tokyo, Japan). According to Yamasaki (1997)[33], TAl were measured using the H_2SO_4–HNO_3–$HClO_4$ digestion method followed by inductively coupled plasma optical emission spectrometry with an ICP emission analyzer (iCAP™ 7400 ICP-OES Duo; Thermo Fisher Scientific Inc., Waltham, USA). According to Yara and Kawamoto (2013)[34], EAl, which were obtained by extracting aluminum with 1 M KCl were measured using an inductively coupled plasma optical emission spectrometry with an ICP emission analyzer.

2.3. Statistical analysis

The statistical analyses were performed in R (version 4.3.1 and 4.5.1)[35], using RStudio (version 2023.9.0.463 and 2025.05.1.513)[36]. The chosen level of statistical significance was set at $\alpha = 0.05$.

The relationships between recorded environmental factors were determined using Spearman's rank correlation coefficient (r_s). The Spearman's rank correlation coefficient with the "cor.test" command was performed.

The difference of total individual numbers and numbers of mesofaunal groups were determined using analysis of variance. The analysis of variance with the "aov" command was performed.

Non-metric multi-dimensional scaling (NMDS) was used to demonstrate changes in the taxonomic structure of the soil mesofaunal assemblage at each station, based on Sychra et al. (2010)[11]. Dataset for analysis derived from Tables 2–4. The NMDS was based on the Morisita–Horn dissimilarity index[37], calculated on log (x+1) transformed taxa abundances. Although the Bray–Curtis dissimilarity index is widely used in NMDS analysis, it is formulated for species composition only, whereas the Morisita–Horn dissimilarity index can be used with sample size[38]. After NA (not available) values were replaced with 0, the "metaMDS" command from the "vegan" library was used in R to run NMDS, in which the number of dimensions, "*k*", was 2. Zero dissimilarities were replaced by a small positive value using "zerodist = add". The "ordispider" command from the "vegan" library was used to draw a 'spider' diagram where each point is connected to the group centroid with segments. Abundant taxa and environmental factors were fitted through the command "envfit" from the "vegan" library into the NMDS diagram using multiple linear regression. Because TN content had a high positive correlation with TC content, seven environmental factors were selected for the NMDS analysis: distance from open water, soil pH, TN content, C/N ratio, TFe content, TAl content, and EAl content. The species scores were added using the command "sppscores" from the "vegan" library.

3. Results

3.1. Characterization of sampling stations

The soil properties at each sampling station are listed in Table 1. There were significant positive correlations between the following four combinations: distance from the river stream with EAl ($r_s = 0.67$) ; TN with TC ($r_s = 0.97$) and TAl ($r_s = 0.90$) ; and TC with TAl ($r_s = 0.83$) . There were significant negative correlations between pH and two properties: C/N ($r_s = -0.70$) and EAl ($r_s = -0.89$) . The pH value was lowest (3.5 ± 0.1) at St. 2-F and highest (6.1 ± 0.2) at St. 1-F. The values of four properties (TN, TC, TFe, and EAl) were highest at St. 3-F, and those of four properties (TN, TC, C/N, and TAl) were lowest at St. 3-N. There was a significant negative correlation between distance and pH ($r_s = -0.45$), i.e., pH gradually decreased with increasing distance from the river stream. This tendency was clear at St. 3, but pH at St. 1 gradually increased somewhat with increasing distance from the river stream. For EAl, there was a significant positive correlation with distance ($r_s = 0.67$), and this tendency was clear in St. 3. The soil properties of the riparian areas were influenced by the distance from nearby river.

3.2. Wet mesofauna

Individual numbers of mesofauna in October, November and December are listed in Tables 2, 3 and 4, respectively. And also, total individual numbers during sampling periods are listed in Table 5. Only Table 5 was used for further analyses to reveal the effect of distance from the river stream on mesofauna when the reeds had withered almost completely. For the wet mesofauna, the total number of individuals was highest in St. 1. There was no significant difference in the total number of individuals and the number of groups among three stations (Figs 2.A and 2.C) . From nine sampling plots, five groups of wet mesofauna and five genera of Enchytraeidae were found (Table 5.A). The records of the enchytraeids *Cernosvitoviella* and *Lumbricillus lineatus* (O.F. Müller) (Oligochaeta: Enchytraeidae) are the first in the riparian areas of the river inflow to Lake Inawashiro. Enchytraeids were abundant, accounting for 35.6% of total individuals. *Lumbricillus* was obtained from four plots. The number of individuals of *Achaeta*, which was obtained from only two plots, was large at St. 2-M.

At all three stations, the total numbers of individuals were highest in sample F and lowest in sample M (Table 5.A). The total number of individuals was greatest at St. 1-F and smallest at St. 3-M. The number of groups was from two to four. The genus number of enchytraeids was highest in St. 3-F.

Of the five groups recovered, enchytraeids, lumbriculids, and coleopterans (larvae) were abundant in many plots. Enchytraeids were found in six plots (not St. 1-N, St. 2-N, and St. 3-N), lumbriculids were obtained from seven plots (not St. 2-M and St. 3-M), and coleopterans (larvae) were recovered from all samples except St. 1-M. The abundance of enchytraeids was higher than the abundances of the other two groups. Enchytraeid abundance gradually increased with increasing distance from the river stream, from N to F in St. 1 and St. 3.

The results of the NMDS analysis (Fig. 3.A, stress = 0.128) demonstrated that the community compositions of the three plots at St. 3 were different from those at St. 1 and 2. Plots 2-N and 2-F exhibited a similar composition to all three samples from St. 1. St. 2-M had an unusual composition with a much greater abundance of *Achaeta* than other samples (Table 2.A). The NMDS analysis (Fig. 3.B) indicated that there were significant correlations between the abundance of coleopteran larvae and TAl and TN, also TC which had a high positive correlation with TN.

3.3. Dry mesofauna

Individual numbers of mesofauna in October, November and December are listed in Tables 2, 3 and 4, respectively. And also, total individual numbers during sampling periods are listed in Table 5. Only Table 5 was used for further analyses to reveal the effect of distance from the river stream on mesofauna when the reeds had withered almost completely. For the dry mesofauna, the total number of individuals and the number of groups were highest in St. 1 and lowest in St. 3. There was no significant difference in the total number of individuals and the number of groups among three stations (Figs 2.B and 2.D). Among nine groups (Table 5.B), collembolans were abundant, accounting for 34.5% of the total abundance. The second group, oribatids, made up 24.9% of the total abundance, and nine families were identified. The total numbers of both individuals and groups were highest at St. 1-F and smallest at St. 3-N. In many plots, collembolans, non-oribatid mites, oribatids, and dipterans (larvae) were abundant. The groups with the largest individual abundances were collembolans at St. 2-F, non-oribatid mites and oribatids at St. 1-M, and dipterans (larvae) at St. 1-F. In total, nine families of oribatids were found, with the highest number (eight families) at St. 2-F. *Oppiella nova* (Oudemans) (Oribatida: Oppiidae) and *Tectocepheus velatus* (Michael) (Oribatida: Tectocepeidae) were abundant: *T. velatus* was obtained from seven plots (not N of St. 1 and St. 2). These occurrences of Oribatida are the first records in the riparian areas of the river inflow to Lake Inawashiro.

From NMDS analysis (Fig. 3.C, stress = 0.198), overall the community composition did not differ with distance from running water. In St. 1, there was a small effect of distance. Samples M and F of St. 1 were mutually similar to St. 3F. At St. 2, sample N was unusual with a distinct lack of non-oribatid mites and a much least abundance of collembolans than samples M and F, and samples M and F were mutually similar, and different from the samples from St. 1 and St. 3. At St. 3, the community compositions of samples N and M were unusual; in particular, N contained only oribatids (Table 5.B). The NMDS analysis indicated that there were no correlations between the abundances of each group and all soil properties.

At all three stations, the total abundance of individuals and the number of groups rose gradually with increasing distance from the river stream. The abundances of collembolans at all three stations, non-oribatid mites at St. 2, oribatids at St. 2 and St. 3, dipterans (larvae) at St. 1, coleopterans (adults) at St. 1 and St. 3, and coleopterans (larvae) at St. 1 increased gradually with increasing distance from the river stream.

4. Discussion

The soil pH value at St. 1, situated upstream of the confluence of the Nagase and Sukawa rivers, was 6.0–6.1 and that of St. 3, located downstream from the confluence, was 4.1–4.9. This decrease is thought to result from mixing with acidic running water (i.e., the Sukawa River) and often submerged; specifically, the pH of the running water (7.47 at St. 1) was reduced to 4.03 at St. 3 by admixture of water with pH 3.09 (measured at St. 2). The total numbers of individuals of both wet and dry mesofauna were highest at St. 1 and lowest at St. 3, but there was no significant difference (Fig. 2). The following characteristics with the distance from the river stream were observed: soil properties and soil invertebrates.

4.1. Soil properties and distance from the river stream

The results in this study indicate that distance from the river influences soil properties. Notably, soil pH at St. 2 and St. 3 gradually decreased with increasing distance from the river stream. Many other properties (TN, TC, C/N, TFe and TAl) gradually decreased at St. 1 and gradually increased at St. 3 with increasing distance from the river stream. At St. 3, EAl also increased. At St. 2, four properties (TN, TC, TAl and EAl) gradually increased and two properties (C/N and TFe) gradually decreased with increasing distance from the river stream.

4.2. Soil invertebrates and distance from the river stream

There were several groups that individual abundance gradually increased with increasing distance from the river stream, but no group showed a gradual decrease in individual abundance with increasing distance from the river stream. At three stations, the individual number of collembolans gradually increased with increasing distance from river stream. The individual numbers of other four groups (enchytraeids of wet mesofauna, and dipterans (larvae), coleopterans (adults) and coleopterans (larvae) of dry mesofauna) at St. 1, those of other two groups (non-oribatid mites and oribatids of dry mesofauna) at St. 2 and other three groups (enchytraeids of wet mesofauna, and oribatids and coleopterans (larvae) of dry mesofauna) at St. 3 gradually increased with increasing distance from the river stream.

4.3. Soil invertebrates and soil properties in reed beds of acidic-river floodplains

Soil invertebrate faunas exhibited distinct differences both among the study locations and with distance from the river at each location. At St. 1, the values of many soil properties decreased, but the abundances of individuals of total dry mesofauna, and five groups of dry mesofauna gradually increased with increasing distance from the river stream. At St. 2 and St. 3, pH fell and the values of other properties at St. 3 increased. The individual abundances of three groups of dry mesofauna at St. 2 and four groups at St. 3 gradually increased with increasing distance from the river stream. The individual abundances of enchytraeids and collembolans gradually increased at St. 1 and St. 3 with increasing distance from the river stream, but soil properties showed the opposite fluctuations, namely the decrease at St. 1 and the increase at St. 3. There was no clear correlation between the many measured soil properties and the total number of individuals or the number of individuals within each group. Only coleopterans (larvae) of wet mesofauna exhibited a significant correlation with three soil parameters (TN, TC and TAl). As mentioned above, this may be caused by the effect of distance from the river stream.

Of the nine plots, two (St. 2-M and St. 2-F) had extremely acidic soil (pH 3.5–3.6) and three (St. 3) were often submerged by acidic water. From these five plots, five genera of enchytraeids and eight families of oribatids were collected. In particular, the enchytraeid *Achaeta* was abundant at St. 2-M. *Tectocepheus velatus* and many oribatid nymphs were obtained from these five plots. Both enchytraeids and oribatids are present in both terrestrial and aquatic habitats throughout the world and are thought to be indicators of soil quality (enchytraeids: Didden 1993[17]; Didden and Römbke 2001[39]; Pelosi and Römbke 2018[40]; oribatids: Behan-Pelletier 1999[41]; Gergócs and Hufnagel 2009[42]; Georg et al. 2017[43]).

In general, enchytraeids are mainly found in neutral to acid soil, but the majority of enchytraeid species prefer slightly acid to alkaline habitats[17]. The pH value is one of the important environmental factors for the distribution of enchytraeid species in Ireland[12]. In Scottish soils, higher numbers of enchytraeids were found to occur at low soil pH levels[44]. In the present study, no positive or negative correlation was detected between enchytraeid abundance and pH (Fig. 3.B), which we attribute to the pH range (pH 3.5 to 6.1) being narrower than that (pH 3.3 to 8.6) reviewed by Didden (1993)[17]. In previous studies, *Achaeta* species were found to prefer a low pH range[45] and slightly low pH in German floodplain soil[46]. In this study, *Achaeta*, *Fridericia*, and *Lumbricillus* were found at the sites with the lowest pH values (pH 3.5–3.6, St. 2-M and F); in particular, *Achaeta* was abundant. The soft bodies of enchytraeids are directly in contact with various elements in the soil solution or flood water. It is indicated that soil acidification causes aluminum toxicity for soil invertebrates[45]. In the soil solution, excess H^+ ions in acidic waters ($pH < 4.5$) leads to a sharp increase in the concentration of toxic aluminum ions (Al^{3+})[32]. In fact, the aluminum concentration

(TAl) in river water was higher in the Sukawa River (10.00 mg L^{-1}, av. in 2016) than in the Nagase River (0.02 mg L^{-1}, av. In 2016)[47, 48]. In the present study, there was a negative correlation between pH and exchangeable Al (EAl) ($r_s = -0.89$, $p < 0.05$). EAl was higher at St. 3 (0.01–0.06 mg L^{-1}) than at St. 1 (<0.001 mg/L). *Achaeta*, *Enchytraeus*, *Fridericia*, and *Lumbricillus* were found in the plot with the highest EAl value (St. 3-F). *Enchytraeus* was only found in October of this plot.

As well as enchytraeids, lumbriculids (which are common in freshwater environments), were obtained from the sampled localities, reflecting the moist habitat. Enchytraeids are vulnerable to drought and therefore confined to moist habitats[17]. In a survey in southern Sweden, Erséus et al. (2005)[49] reported that many enchytraeid species were found only in the semi-aquatic habitat of river banks. In wet grassland, a negative correlation between soil water content and enchytraeid abundance has been reported[50]. In environments that are constantly flooded by waste water, such as percolating filters of sewage treatment plants[51, 52] and waste-water treatment trenches[53, 54], enchytraeids are the main organisms.

A variety of oribatid species have been termed "acidophilic"[55]; for example, oribatids are abundant in acid soils polluted by heavy metals[56], and tolerate even very acidic conditions[57]. In contrast, oribatids have also been detected in an alkaline environment[58]. In the present study, there was no positive or negative correlation between oribatid abundance and pH value. We hypothesize that the lack of correlation arises from the pH range in the present study being narrow (pH 3.5 to 6.1), and oribatids in general are found in habitats across a wide range of pH values. At St. 3-M, the site with low pH value (4.4), five families of oribatids were collected and *T. velatus* was abundant. *Tectocepheus velatus* is a cosmopolitan species[59]. *Tectocepheus* reproduces by thelytoky and is known to colonize new habitats quickly[60, 61].

Gergócs and Hufnagel (2009)[42] described in a review article that oribatids generally prefer habitats with elevated humidity and are susceptible to drought. However, the remarkable abilities of terrestrial oribatid species to survive long inundations were revealed by an experimental study[18]. Zinkler (1999)[19] proposed four possible mechanisms allowing oribatids to survive periods of inundation. Bardel and Pfingstl (2018)[62] proved one of the four proposals, plastron respiration (a layer of air kept on the body surface supplying the tracheal system with oxygen) for terrestrial oribatids. In the present study, *O. nova*, *Oppiella* spp., *T. velatus*, and Phthiracaridae were found in the often submerged sites.

Reeds and other aquatic plants are known to exhibit a capacity for water purification[5, 6]. Decomposition of their shed leaves and dead stems is dependent upon faunal involvement[10, 11]. As mentioned above, the main components of the mesofauna were enchytraeids and oribatids. Enchytraeids and oribatids are decomposers[17, 41] and are thought to play a role in the decomposition of reeds even in acidic riparian areas. Further studies on the functions of these taxa during decomposition are required to understand the capacity for water purification of the riparian habitat.

5. Conclusions

In the present study, the soil parameters were measured and the mesofauna were assessed in sites upstream (two sites) and downstream (one site) of the confluence of the Nagase and Sukawa rivers during October to December 2018. The downstream riparian area was often submerged by acidic running water, and the soil pH was lower than that of the upstream area. In the submerged area (St. 3), soil pH gradually decreased and six measured properties (TN, TC, C/N, TFe, TAl, and EAl) gradually increased with increasing distance from the river stream. Five wet mesofaunal groups were obtained by the wet funnel method (O'Conner method) and nine dry mesofaunal groups were obtained by the dry funnel method (Tullgren method). Five genera of Enchytraeidae and nine families of Oribatida were identified. The enchytraeids *Achaeta*, *Fridericia*, and *Lumbricillus* and the oribatids Phthiracaridae, *Oppiella nova* (Oudemans) (Oribatida: Oppiidae), and *Tectocepheus velatus* (Michael) (Oribatida: Tectocepeidae) were present in extremely acidic soil and soil often submerged by acidic running water. *Achaeta* and *T. velatus* were particularly abundant. There were several groups that individual abundance gradually increased with increasing distance from the river stream, but no group showed a gradual decrease in individual abundance with increasing distance from the river stream. In the upstream area (St. 1), many soil properties gradually decreased with increasing distance from the river, but the abundances of enchytraeids, and collembolans increased. In the area with extremely acid soil pH (St. 2), two soil parameters (C/N and TFe) decreased and four (TN, TC, TAl, and EAl) gradually increased with increasing distance from the river. The abundances of collembolans, non-oribatid mites, and oribatids gradually increased with increasing distance from the river. Together with enchytraeids, lumbriculids (which are common in freshwater environments) were obtained from all three stations. This ubiquity is thought to reflect the moist habitat preferred by these animals.

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The authors report there are no competing interests to declare.

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Author contributions

All authors contributed to the study conception and design. Sampling, measurement, and data analysis were performed by Kazunori Nakamura. Identification of soil mesofauna was performed by Yoshio Nakamura and Kazunori Nakamura. Interpretation of the data was performed by Kazunori Nakamura, Kazunori Nakano, and Yoshio Nakamura. The first draft of the manuscript was written by Kazunori Nakamura, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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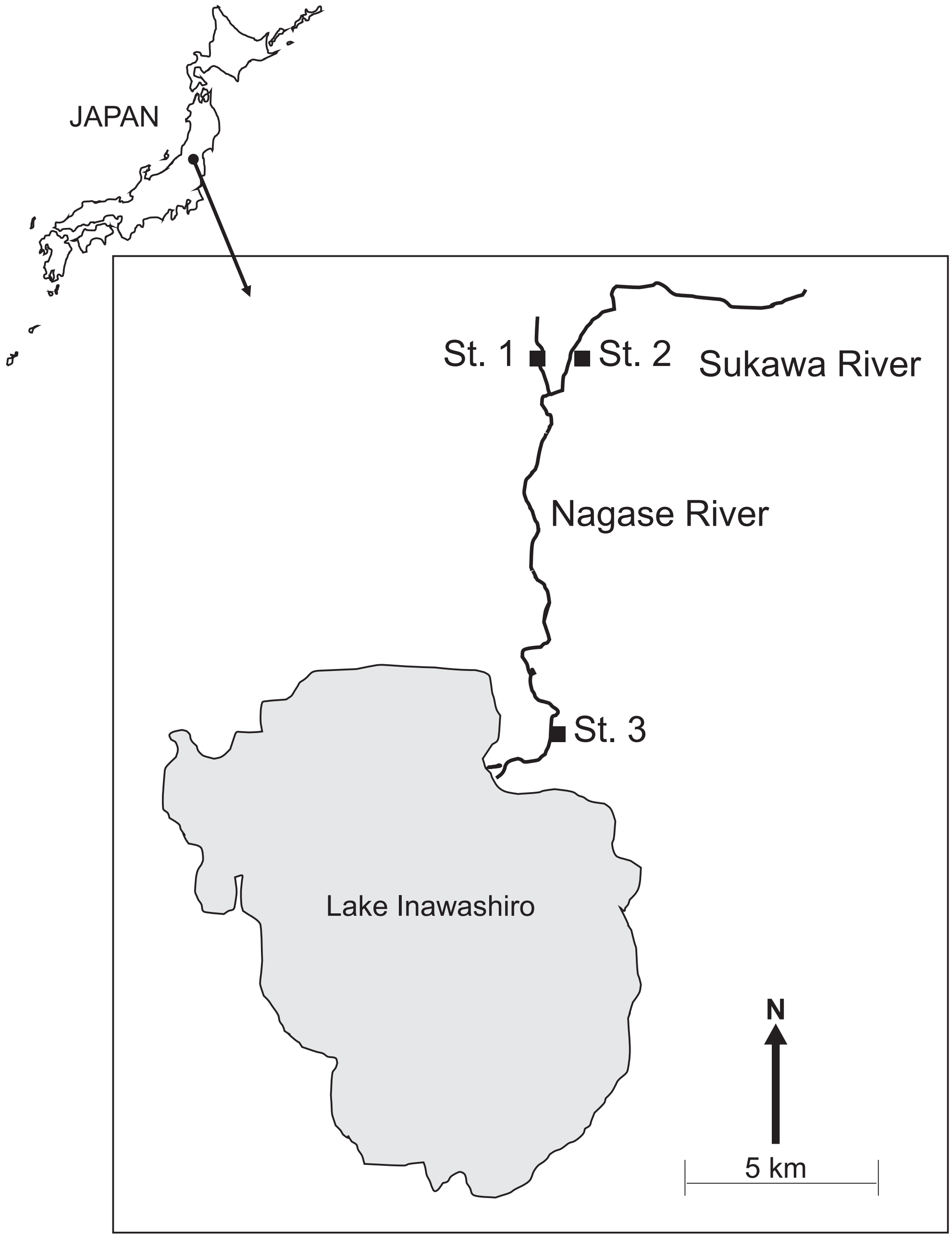

Fig. 1 . Geography of the Nagase River, SukawaRiver, Lake Inawashiro, and the sampling stations (St. 1-3).

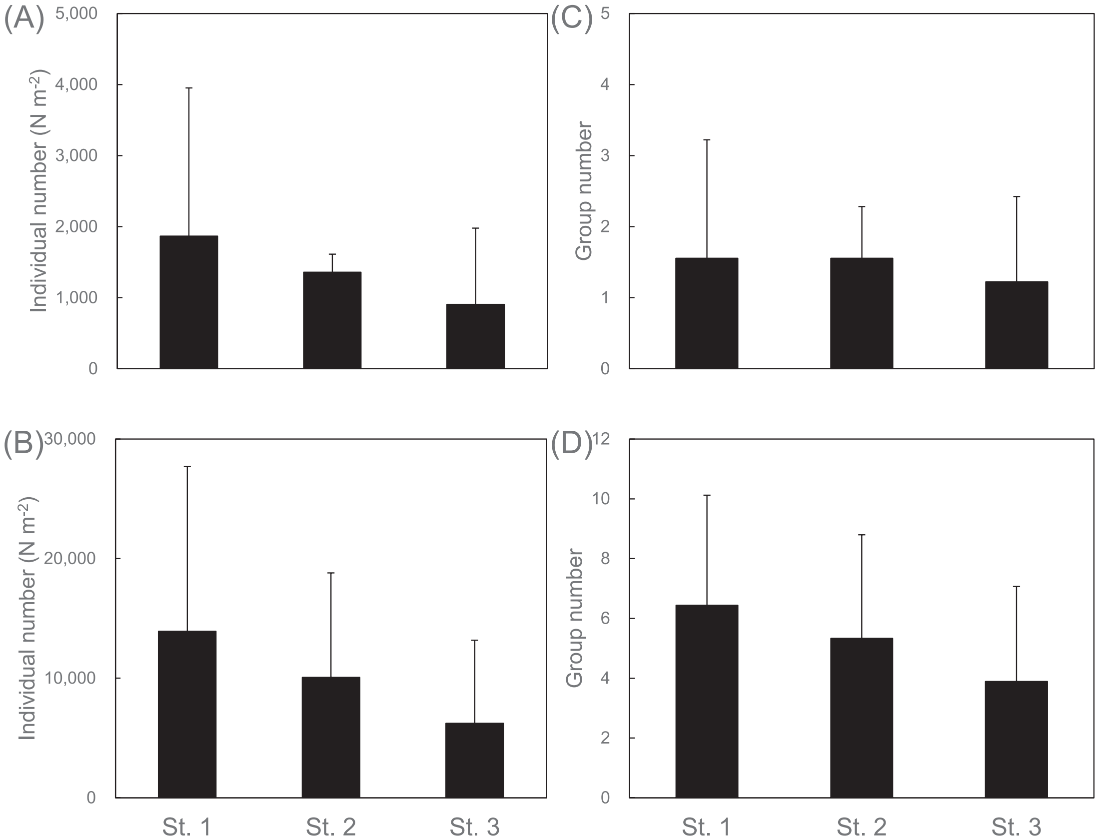

Fig. 2 . Total number of individuals and groups (means ±SD) of (A, C) wet mesofauna and (B, D) dry mesofauna (n = 9; three months and three plots).

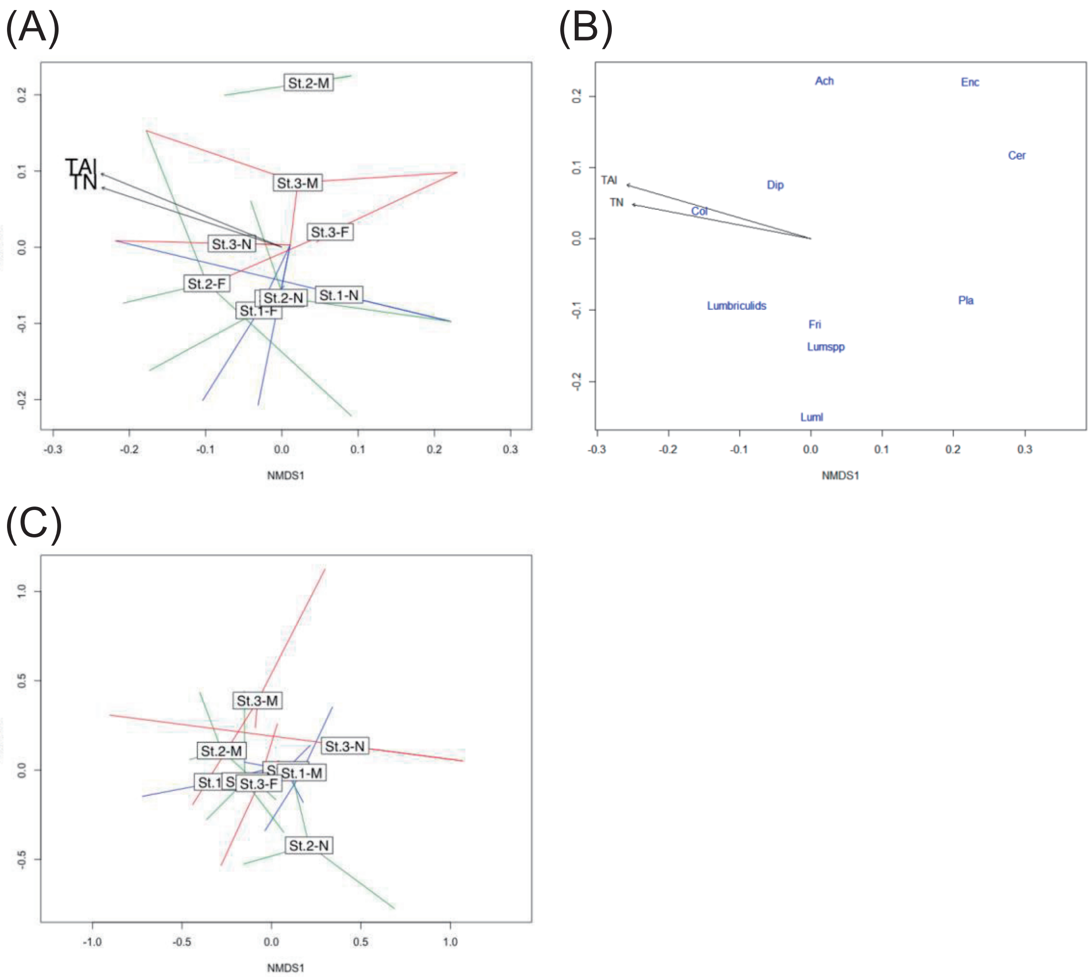

Fig. 3 . Two-dimensional NMDS ordination plot for (A) wet mesofauna with samples, (B) wet mesofauna with taxa abundances, and (C) dry mesofauna with samples. The lines that radially extend from each label in 3.A and 3.C connect faunal communities from the same reed bed area in October, November, and December. The environmental factors with significant correlations are also shown. Environmental factors in 3.A and 3.B were abbreviated as follows: TN, total nitrogen; TAl, total aluminum. TC content had a high positive correlation with TN content. Enchytraeid genus and group names in 3.B were abbreviated as follows: Ach, *Achaeta* spp.; Cer, *Cernosvitoviella* sp.; Enc, *Enchytraeus* sp.; Fri, *Fridericia* spp.; Luml, *Lumbricillus lineatus*; Lumspp, *Lumbricillus* spp.; Pla, planarians; Dip, dipterans (larvae); Col, coleopterans (larvae).

Table 1 : Soil properties at each sampling plot.

Plot		St. 1 - N	St. 1 - M	St. 1 - F	St. 2 - N	St. 2 - M	St. 2 - F	St. 3 - N	St. 3 - M	St. 3 - F
River			Nagase River			Sukawa River			Nagase River	
			pH 7.47, Al 0.02 mg L^{-1} §			pH 3.09, Al 10.00 mg L^{-1} §			pH 4.03, Al 3.54 mg L^{-1} §	
Coordinate†			37°36'2.58" N, 140°7'40.10" E			37°36'37.98" N, 140°8'18.14" E			37°31'8.80" N, 140°7'47.97" E	
Altitude (m)†			564.2			566.4			514.5	
Distance from Lake Inawashiro (km)†			10.368			11.590			1.855	
Distance from the river (m)		0	1.0	2.0	0	2.5	5.0	0	5.5–7.0	11.0–14.0
Substratum		mud	mud	soil	sand, litter	sand, soil	soil	stone, sand	stone, sand, soil	soil
Soil temperature at -5 cm depth (°C)‡	Oct.		10.9			10.2			11.5	
	Nov.		8.4			8.3			9.7	
	Dec.		2.4			2.5			1.3	
Moisture content at December (%, n=1)		79	65	55	44	53	52	12	14	67
Soil pH (*n*=3)*		6.0 ± 0.4	6.0 ± 0.2	6.1 ± 0.2	4.4 ± 1.0	3.6 ± 0.2	3.5 ± 0.1	4.9 ± 0.3	4.4 ± 0.3	4.1 ± 0.1
Total nitrogen (TN, %, *n*=3)*		0.48 ± 0.10	0.40 ± 0.07	0.22 ± 0.06	0.09 ± 0.08	0.16 ± 0.02	0.21 ± 0.05	0.02 ± 0.01	0.19 ± 0.08	0.51 ± 0.08
Total carbon (TC, %, *n*=3)*		8.26 ± 2.66	6.77 ± 0.88	3.28 ± 0.90	2.50 ± 2.16	4.41 ± 0.37	4.99 ± 1.12	0.25 ± 0.07	3.54 ± 2.08	10.55 ± 1.98
C/N ratio (*n*=3)*		16.97 ± 1.71	16.84 ± 0.62	14.88 ± 0.59	28.17 ± 1.01	27.02 ± 0.47	23.36 ± 0.92	13.72 ± 3.82	17.56 ± 2.69	20.61 ± 0.92
Total iron (TFe, %, *n*=3)*		3.84 ± 0.10	3.79 ± 0.31	3.21 ± 0.51	3.38 ± 0.25	3.04 ± 0.15	2.97 ± 0.17	3.77 ± 0.68	3.88 ± 0.07	4.17 ± 0.15
Total aluminum (TAl, %, *n*=3)*		4.25 ± 0.37	3.95 ± 0.56	3.11 ± 0.82	2.19 ± 0.40	2.22 ± 0.16	2.82 ± 0.19	1.13 ± 0.20	2.96 ± 0.34	3.94 ± 0.06
Exchangeable aluminum (EAl, %, *n*=3)*		<0.001	<0.001	<0.001	0.02 ± 0.02¶	0.04 ± 0.02	0.05 ± 0.02	0.01 ± 0.03	0.03 ± 0.02	0.06 ± 0.005

† Data were derived from the Geospatial Information Authority of Japan website[63)]

‡ Soil temperature near at each sampling station

§ Data were derived from the Fukushima Prefectural Centre for Environmental Creation website[47, 48)]

¶ The <0.001 datum was calculated as 0

* Values are mean ± standard deviation

Table 2 : Individual numbers (N m^{-2}) of wet mesofauna (A) and dry mesofauna (B) in October.

Group	St. 1 - N	St. 1 - M	St. 1 - F	St. 2 - N	St. 2 - M	St. 2 - F	St. 3 - N	St. 3 - M	St. 3 - F	Sum	%
A. wet mesofauna											
Enchytraeids	0	1,528	1,528	0	1,528	1,528	0	0	509	6,621	39.4
Achaeta spp.	0	0	0	0	1,528	0	0	0	0		
Cernosvitoviella sp.	0	0	0	0	0	0	0	0	0		
Enchytraeus sp.	0	0	0	0	0	0	0	0	509		
Fridericia spp.	0	0	0	0	0	509	0	0	0		
Lumbricillus lineatus (O.F. Müller)	0	1,019	0	0	0	0	0	0	0		
Lumbricillus spp.	0	509	1,528	0	0	1,019	0	0	0		
Lumbriculids	509	509	2,546	1,528	0	0	509	0	0	5,602	33.3
Planarians	0	0	509	0	0	0	0	0	0	509	3.0
Dipterans (larvae)	0	0	0	0	0	0	0	0	0	0	0.0
Coleopterans (larvae)	1,528	0	1,019	0	0	0	1,528	0	0	4,074	24.2
Total number	2,037	2,037	5,602	1,528	1,528	1,528	2,037	0	509	16,807	100
B. dry mesofauna											
Collembolans	509	12,732	13,242	1,019	13,751	5,602	0	509	2,037	49,402	38.8
Non-oribatid mites	509	14,260	2,546	0	3,565	509	0	509	7,130	29,030	22.8
Oribatids	3,056	5,602	5,093	5,602	5,093	4,074	1,019	509	2,546	32,595	25.6
Fortuyniidae	0	0	0	1,019	509	0	0	0	0		
Galumnidae	0	0	509	509	0	1,019	0	0	0		
Phthiracaridae	0	0	509	0	0	0	0	0	0		
Scheloribatidae											
Scheloribatidae sp. a	0	509	0	0	509	0	0	0	0		
Scheloribatidae sp. b	0	0	0	0	509	509	0	0	0		
Euphthiracaridae	0	0	1,528	0	509	0	0	0	0		
Ceratokalummidae	0	0	0	0	0	0	0	0	0		
Oppiidae											
Oppiella spp.	0	0	0	0	0	0	0	0	509		
Oppiella nova (Oudemans)	0	0	1,019	0	0	0	0	0	509		
Tectocepeidae											
Tectocepheus velatus (Michael)	0	509	509	0	1,019	0	0	0	509		
Nothridae	0	509	509	0	0	0	0	0	0		
Oribatid nymph	3,056	4,074	509	4,074	2,037	2,546	1,019	509	1,019		
Spiders	0	0	0	509	0	0	0	0	509	1,019	0.8
Millipedes	0	0	0	0	0	0	0	0	0	0	0.0
Dipterans (larvae)	509	2,546	509	2,546	509	0	0	0	1,019	7,639	6.0
Coleopterans (adults)	0	0	1,019	0	0	0	0	0	1,019	2,037	1.6
Coleopterans (larvae)	0	1,019	509	509	0	0	0	3,056	0	5,093	4.0
Gammarus	0	0	509	0	0	0	0	0	0	509	0.4
Total number	4,584	36,160	23,428	10,186	22,918	10,186	1,019	4,584	14,260	127,324	100

Table 3 : Individual numbers (N m^{-2}) of wet mesofauna (A) and dry mesofauna (B) in November.

Group	St. 1 - N	St. 1 - M	St. 1 - F	St. 2 - N	St. 2 - M	St. 2 - F	St. 3 - N	St. 3 - M	St. 3 - F	Sum	%
A. wet mesofauna											
Enchytraeids	0	0	1,019	0	1,019	0	0	509	1,019	3,565	38.9
Achaeta spp.	0	0	0	0	1,019	0	0	0	509		
Cernosvitoviella sp.	0	0	0	0	0	0	0	509	0		
Enchytraeus sp.	0	0	0	0	0	0	0	0	0		
Fridericia spp.	0	0	1,019	0	0	0	0	0	509		
Lumbricillus lineatus (O.F. Müller)	0	0	0	0	0	0	0	0	0		
Lumbricillus spp.	0	0	0	0	0	0	0	0	0		
Lumbriculids	0	0	509	509	0	1,019	0	0	509	2,546	27.8
Planarians	1,528	0	0	0	0	0	0	0	0	1,528	16.7
Dipterans (larvae)	0	0	0	509	0	0	0	0	0	509	5.6
Coleopterans (larvae)	0	0	0	509	0	509	0	0	0	1,019	11.1
Total number	1,528	0	1,528	1,528	1,019	1,528	0	509	1,528	9,167	100
B. dry mesofauna											
Collembolans	0	0	6,621	0	2,037	4,074	0	2,037	1,019	15,788	20.7
Non-oribatid mites	0	0	6,621	0	0	509	0	12,732	1,528	21,390	28.0
Oribatids	0	7,639	3,565	0	1,019	4,074	509	4,074	0	20,881	27.3
Fortuyniidae	0	0	0	0	0	509	0	0	0		
Galumnidae	0	0	0	0	0	0	0	0	0		
Phthiracaridae	0	0	0	0	509	509	0	509	0		
Scheloribatidae											
Scheloribatidae sp. a	0	0	0	0	0	0	0	0	0		
Scheloribatidae sp. b	0	0	0	0	0	0	0	0	0		
Euphthiracaridae	0	1,528	0	0	0	509	0	0	0		
Ceratokalummidae	0	0	0	0	0	509	0	0	0		
Oppiidae											
Oppiella spp.	0	0	0	0	0	0	0	0	0		
Oppiella nova (Oudemans)	0	1,019	1,019	0	0	1,019	0	1,019	0		
Tectocepeidae											
Tectocepheus velatus (Michael)	0	509	0	0	0	0	509	1,528	0		
Nothridae	0	0	509	0	0	0	0	0	0		
Oribatid nymph	0	4,584	2,037	0	509	1,019	0	1,019	0		
Spiders	0	0	1,019	0	0	0	0	0	509	1,528	2.0
Millipedes	0	0	1,528	0	0	509	0	0	0	2,037	2.7
Dipterans (larvae)	0	2,037	7,639	1,528	0	0	0	0	1,019	12,223	16.0
Coleopterans (adults)	0	509	1,019	0	509	509	0	0	0	2,546	3.3
Coleopterans (larvae)	0	0	0	0	0	0	0	0	0	0	0.0
Gammarus	0	0	0	0	0	0	0	0	0	0	0.0
Total number	0	10,186	28,011	1,528	3,565	9,677	509	18,844	4,074	76,394	100

Table 4 : Individual numbers (N m^{-2}) of wet mesofauna (A) and dry mesofauna (B) in December.

Group	St. 1 - N	St. 1 - M	St. 1 - F	St. 2 - N	St. 2 - M	St. 2 - F	St. 3 - N	St. 3 - M	St. 3 - F	Sum	%
<u>A. wet mesofauna</u>											
Enchytraeids	0	0	0	0	509	0	0	0	1,528	2,037	20.0
Achaeta spp.	0	0	0	0	509	0	0	0	0		
Cernosvitoviella sp.	0	0	0	0	0	0	0	0	0		
Enchytraeus sp.	0	0	0	0	0	0	0	0	0		
Fridericia spp.	0	0	0	0	0	0	0	0	1,019		
Lumbricillus lineatus (O.F. Müller)	0	0	0	0	0	0	0	0	0		
Lumbricillus spp.	0	0	0	0	0	0	0	0	509		
Lumbriculids	0	0	0	0	0	0	0	0	0	0	0.0
Planarians	3,056	0	0	1,019	0	0	0	0	0	4,074	40.0
Dipterans (larvae)	0	0	0	0	0	0	0	0	0	0	0.0
Coleopterans (larvae)	0	0	0	0	509	1,528	0	509	1,528	4,074	40.0
Total number	3,056	0	0	1,019	1,019	1,528	0	509	3,056	10,186	100
<u>B. dry mesofauna</u>											
Collembolans	1,019	509	1,528	0	5,602	15,788	0	0	0	24,446	39.0
Non-oribatid mites	509	3,056	2,546	0	1,019	4,074	0	0	0	11,205	17.9
Oribatids	1,019	2,546	2,037	0	509	4,074	509	0	3,565	14,260	22.8
Fortuyniidae	0	0	0	0	0	0	0	0	0		
Galumnidae	0	0	0	0	0	509	0	0	0		
Phthiracaridae	0	0	0	0	0	0	0	0	0		
Scheloribatidae											
Scheloribatidae sp. a	0	509	0	0	0	0	0	0	0		
Scheloribatidae sp. b	0	0	0	0	0	509	0	0	0		
Euphthiracaridae	0	509	0	0	0	0	0	0	0		
Ceratokalummidae	0	0	0	0	0	0	0	0	0		
Oppiidae											
Oppiella spp.	0	0	0	0	0	0	0	0	509		
Oppiella nova (Oudemans)	0	509	1,019	0	0	0	0	0	509		
Tectocepeidae											
Tectocepheus velatus (Michael)	0	0	509	0	0	509	509	0	509		
Nothridae	0	0	0	0	0	0	0	0	0		
Oribatid nymph	1,019	1,019	509	0	509	2,546	0	0	2,037		
Spiders	1,528	0	0	0	0	0	0	0	0	1,528	2.4
Millipedes	509	0	0	0	509	0	0	0	0	1,019	1.6
Dipterans (larvae)	0	509	0	0	0	509	0	0	0	1,019	1.6
Coleopterans (adults)	0	0	0	0	0	0	0	509	1,019	1,528	2.4
Coleopterans (larvae)	0	2,037	4,584	0	0	509	0	0	509	7,639	12.2
Gammarus	0	0	0	0	0	0	0	0	0	0	0.0
Total number	4,584	8,658	10,695	0	7,639	24,955	509	509	5,093	62,643	100

Table 5 : Individual numbers (N m^{-2}) of wet mesofauna (A) and dry mesofauna (B). Values are total of three sampling times.

Group	St. 1 - N	St. 1 - M	St. 1 - F	St. 2 - N	St. 2 - M	St. 2 - F	St. 3 - N	St. 3 - M	St. 3 - F	Sum	%
A. wet mesofauna											
Enchytraeids	0	1,528	3,565	0	3,056	1,528	0	509	3,056	13,242	35.6
Achaeta spp.	0	0	0	0	3,056	0	0	0	509		
Cernosvitoviella sp.	0	0	0	0	0	0	0	509	0		
Enchytraeus sp.	0	0	0	0	0	0	0	0	509		
Fridericia spp.	0	0	2,037	0	0	509	0	0	1,528		
Lumbricillus lineatus (O.F. Müller)	0	1,019	0	0	0	0	0	0	0		
Lumbricillus spp.	0	509	1,528	0	0	1,019	0	0	509		
Lumbriculids	509	509	3,056	2,037	0	1,019	509	0	509	8,149	21.9
Planarians	4,584	0	509	1,019	0	0	0	0	0	6,112	16.4
Dipterans (larvae)	0	0	0	509	0	0	0	0	0	509	1.4
Coleopterans (larvae)	1,528	0	1,019	509	509	2,037	1,528	509	1,528	9,167	24.7
Total number	6,621	2,037	8,149	4,074	3,565	4,584	2,037	1,019	5,093	37,179	100
B. dry mesofauna											
Collembolans	1,019	13,242	21,390	1,019	21,390	25,465	0	2,546	7,639	93,710	34.5
Non-oribatid mites	509	17,316	11,714	0	4,584	5,093	0	13,242	10,695	63,153	23.2
Oribatids	4,074	15,788	10,695	5,602	6,621	12,223	2,037	4,584	6,112	67,736	24.9
Fortuyniidae	0	0	0	1,019	509	509	0	0	0		
Galumnidae	0	0	509	509	0	1,528	0	0	0		
Phthiracaridae	0	0	509	0	509	509	0	509	0		
Scheloribatidae											
Scheloribatidae sp. a	0	1,019	0	0	509	0	0	0	0		
Scheloribatidae sp. b	0	0	0	0	509	1,019	0	0	0		
Euphthiracaridae	0	2,037	1,528	0	509	509	0	0	0		
Ceratokalummidae	0	0	0	0	0	509	0	0	0		
Oppiidae											
Oppiella spp.	0	0	0	0	0	0	0	0	1,019		
Oppiella nova (Oudemans)	0	1,528	3,056	0	0	1,019	0	1,019	1,019		
Tectocepeidae											
Tectocepheus velatus (Michael)	0	1,019	1,019	0	1,019	509	1,019	1,528	1,019		
Nothridae	0	509	1,019	0	0	0	0	0	0		
Oribatid nymph	4,074	9,677	3,056	4,074	3,056	6,112	1,019	1,528	3,056		
Spiders	1,528	0	1,019	509	0	0	0	0	1,019	4,074	1.5
Millipedes	509	0	1,528	0	509	509	0	0	0	3,056	1.1
Dipterans (larvae)	509	5,093	8,149	4,074	509	509	0	0	2,037	20,881	7.7
Coleopterans (adults)	0	509	2,037	0	509	509	0	509	2,037	6,112	2.2
Coleopterans (larvae)	0	3,056	5,093	509	0	509	0	3,056	509	12,732	4.7
Gammarus	0	0	509	0	0	0	0	0	0	509	0.2
Total number	8,149	55,004	62,134	11,714	34,123	44,818	2,037	23,937	30,048	271,964	100

研究ノート

山口尚『現代日本哲学史試論』を読み終えて

菅　原　　　潤*

Finished Reading Shou Yamaguchi's 'An Essay on The History of Contemporary Japanese Philosophy'

Jun SUGAWARA*

Abstract

Shou Yamaguchi's 'An Essay on The History of Contemporary Japanese Philosophy' was serialized from the January 2024 to June 2025 issue of '*Gendaishisou*.' It narrates contemporary Japanese philosophy books from the 1970s to the present, weaving them together with three threads: Descartes' thread, Kant's thread, and Marx's thread. A notable feature is the positioning of clinical philosophy as a midpoint between Kant's thread and Marx's thread. Additionally, it is important to note that feminism and gender theory are addressed along the way from Kant's thread to Marx's thread. Emphasizing this point reveals that the history of contemporary Japanese philosophy is not merely a repetition of the history of modern Japanese philosophy as seen in the Kyoto School.

Key words: three threads, philosophy of clinical practice, gender studies

要　　約

山口尚『現代日本哲学史試論』は『現代思想』2024年１月号から2025年６月号まで連載された。1970年代から現在にいたるまでの現代日本の哲学書をデカルトの糸，カントの糸，マルクスの糸という３つの糸の撚糸として叙述するものである。特徴的なのはカントの糸からマルクスの糸への中継点として臨床哲学を位置づけていることである。またカントの糸からマルクスへの糸にいたる途上でフェミニズムおよびジェンダー論が取り上げられている点も注意したい。この点を強調すれば，現代日本哲学史が京都学派等の近代日本哲学史の単なる反復ではないことが知られる。

キーワード： ３本の糸，臨床哲学，ジェンダー論

はじめに

『現代思想』2025年６月号で山口尚氏の連載『現代日本哲学史試論』（以下『試論』と略記）が計18回で完結した。評者は日本哲学史研究者を自認しているので，非常に興味をもって連載を読んでいた。以下では『試論』で幾つか転機となる箇所を論じるかたちで『試論』の特徴と問題点を指摘してゆきたい。なお以下では論述の都合上，山口氏を単に著者と表記することとする。

３本の糸から構成された撚糸

『試論』は『現代思想』2024年１月号より１年半をかけた連載である。『試論』を通じて著者は何を目論んでいたのだろうか。連載の第１回を見ると「ドライな年代史的叙述ではなく，むしろ〈私たちの現在を照らし出すようなストーリー〉」を書くのが筆者の目論見だと知られる。その上で「哲学と歴史のあいだには無視できない緊張関係がある」とし「少なくとも事後の視点から眺めれば過去の哲学の営みは特定の歩みを見せる」と言う。そして「特定の歩み」に関して，かなり大胆なテーゼが提示される。

評者は哲学史を〈３本の糸から構成された撚糸〉として描きたいと考えている。それぞれの糸は「デカルトの糸」・「カントの糸」・「マルクスの糸」と名づけられる。ある時期にはある一本の糸が際立つが，別の時期には別の一本の糸が突出する。この３本が撚り合わさって哲学史の大きな流れを構成する。

３本の糸の特質はいかなるものかは後述することとし，こうした目論見の下で第２回以降の議論がどう展開したかを見ておこう。

「自由な思考」と「理論の構築」

著者によれば「廣松渉や大森荘蔵や埴谷雄高の思考においては３本の糸が混然一体となって撚り合っている」のだから，最初の「デカルトの糸」を際立たせたのは誰かと問われれば，それは第５回と第６回で取り上げられた永井均，小泉義之，左近寺祥子，中島義道，鷲田清一ということになる。そして注目されるべきは思考の「スタイル」だとされる。

デカルトの糸のターンの哲学者については，《彼女/彼は

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どんな理論を構築しているか》ではなく，むしろ《彼女/彼はどんなスタイルで思考しているか》こそが見どころになる。じつに「自由な思考」という言葉はひとつだが，そのやり方はさまざまである。〔中略〕要するに先述の哲学者たちの仕事は，《どんな理論をつくったか》というカント的側面ではなく，《思考の自由をどう発現したか》というデカルト的側面で味わわれるべきだ（第５回）。

こうした叙述により「カントの糸」が理論志向だということがうかがわれるが，それではその「カントの糸」への転回を促したのが「デカルトの糸」で扱われたはずの中島とされる。中島自身の議論はともかく，著者の考える「理論」のイメージを見ておこう。第７回の中盤には次のように書かれている。

そもそも哲学の「理論」とは何か。哲学の仕事のひとつは創造的破壊だ。これは何かを発見することではない。むしろ，伝承された「こうするものだ」を破壊し，そのうえで自己の運動を通じて新しい何かを生み出すことである。この仕事の成果は〈私たちにとっての新たな可能性を開くこと〉として結実する。だがこれは哲学の仕事のすべてではない。哲学にはいわば「つねにすでに（インマー・ショーン）」を発見する仕事もある。じつに《私たちの自由が無制限的なものではない》と気づかれた後は――私たちはいつしかこれに気づく運命にあるが――《はたして私たちの自由を制限する枠はどのようなものか》が問われざるをえない。

こうして見ると，そうした「限界づける枠組み」を探究するのが「マルクスの糸」ではないかと思えてくる。

臨床哲学への着目

けれども思いがけないことに『試論』は第10回で，先ずは「臨床哲学」に向けて舵を切る。

臨床哲学は，私たちの知のあり方を反省的に吟味したうえで，「別の仕方の」哲学の道を提示する。この意味で臨床哲学は，一種の反省的理論であると同時に，〈私たちの知的活動を固有の力で再活性化する〉という理論的媒介の力をもつ。その一方で――この点はあらかじめしっかり強調しておきたいが――臨床哲学には「反理論（アンチ・セオリー）」と記述されうるような側面がある。すなわちこの企ては〈純粋に理論的な次元を敢えて離れること〉を本懐とする。かくして臨床哲学は，言ってみれば，「反理論的な理論」の企てであって，現代日本哲学のカント的段階へ無視できない「ひねり」を加えるものだ。

それでは臨床哲学は，どういう意味で「反理論的」なのか。ここで著者は，鷲田の有名な『「聴くこと」の力』を次のように敷衍する（以下，引用頁数の表示は省略）。

臨床哲学は〈聴くこととしての哲学〉のひとつの試みであるが，この場合の〈聴くこと〉とは何か。これは，ひとつには，哲学の営みを〈自分の考えを主張すること〉から〈他者へ応答すること〉へ変える姿勢である。従来の哲学は，〈自己自身への直接的な関係〉でもって「自己」を捉え，この自己が有する意見や考え方を表明したり正当化したりすることに注力してきた。だが自己の存在は「自分がだれかの前に呼ばれていること，召喚（call）されていること」としても理解できる。他者に呼ばれ，その声を聴き，それに応答する形で語られる言葉は，モノローグの言葉と大いに異なる。なぜなら応答として語られる言葉は他者に媒介されているため，自分のものでありながら自分のものを「超えている」からだ。かくして〈聴くこととしての哲学〉は〈モノローグとしての哲学〉が語りえなかった言葉を生み出すことになる。

言うならば〈モノローグとしての哲学〉を打破する点が「反理論的」だと言うのである。著者は鷲田の後継者である村上靖彦の文章を引用するかたちで，看護師Dの「《患者が自律的主体になることを期待することも，けっきょくは，彼/彼女を自分の価値観の側に合わせたいというエゴの一種だったのではないか》という点に思い至っている」ことを強調するかたちで，モノローグ的な哲学のスタイルを批判している。

そのうえで著者は，以前に評判になった『日本哲学の最前線』（講談社現代新書，以下『最前線』と略記）で取り上げた６人の論者が「臨床哲学そのものではないのだが，この企てと少なくとも重なり合う」〈生の現場の哲学〉という「方向性をとっている」という注目すべき発言をしている。この６人の論者はいずれも著者と同年代の50歳前後であることに鑑みれば，カントの糸からデカルトの糸に回帰して自由な思考のスタイルを目指すという仕方で，現代日本哲学史を終わらせてもよかったのではないか。

ジェンダーという歴史的刻印

けれども著者は，自身の言うところの〈生の現場の哲学〉に満足せず「歴史的状況の内部で理論的な実践を行なう」論者に注目する。この方向性がいわゆるマルクスの糸になるわけだが，今しがた挙げた臨床哲学との兼ね合いで注目したいのは，著者がマルクスの糸に逢着する途上で２人の女性研究者に言及していることである。

そのうちの一人が第11回で取り上げられた大越愛子であり〈ジェンダーの観点から従来の哲学を批判すること〉と〈フェミニズムの立場から国家的暴力へ対抗する言説を紡ぐこと〉に携わったとされる。とりわけ重要なのは「従来の哲学は「中立・普遍・客観を装」ってきたが，じっさいにはそれは「抜きがたくジェンダーの刻印を帯びている」」という指摘である。もう一人は第13回で取り上げられる竹村和子である。竹村は哲学の枠組みを超えて「「同性愛者」・「異性愛者」・「男性」・「女性」といったカテゴリーそれ自

体を問題視」し，さらに〈自己の内部に存する名づけがたいもの〉に目を向けることで「アイデンティティの中断の倫理」を呼びかけたとされる。

こうして『試論』は第14回と第15回で柄谷行人を扱うことでクライマックスに達するのだが，それよりももっと重要な問題が横たわっていることを指摘しておきたい。つまり〈モノローグとしての哲学〉を批判し「自分の価値観の側に合わせたい」のは「エゴの一種」ではないかと反省する臨床哲学の姿勢は，形式的には大越と竹村のフェミニズムないしジェンダー論のスタンスに重なるのではないかという指摘である。とりわけ後者の反省をおこなった看護師Dは恐らくは女性であることを考慮すれば，これを受けて臨床哲学はジェンダー論的転回をしても構わなかったのではないか。

これについては，評者は一定の答えを用意している。つまり女性差別ないしジェンダーの観点は，何回かの臨床哲学の実践では到達できないほど歴史的刻印を帯びているという答えである。それゆえ著者も，臨床哲学とは別の枠組みを用意せざるを得なかったというわけである。そもそも臨床哲学の提唱者である鷲田は，著者の分類によれば非歴史的なデカルトの糸に属する論者である。ジェンダーの問題に着目するためには，どうしてもマルクスの糸に著者は立ち返らなければならなかった。

もう一つの現代日本哲学史の可能性

著者は第18回で連載を締め括るにあたり，第１回で示したデカルトの糸・カントの糸・マルクスの糸について次のように整理する。

第１に，哲学史の企てはときにたんなる〈思想の列挙〉へ頽落するが，私は自らの思考を通していわば「それ自体が哲学であるような哲学史」を展開した。たしかに本連載も（それが何であるかを語る以上）思想を並べ立てる作品と解釈されうるが，それでもそこには思考の動性が存す。本連載が「哲学的な」哲学史であること，ここに〈デカルトの糸〉の閃きがある。

第２に本連載は，事後的に振り返れば気づかれるように，哲学史にかんするメタ的な理論を含む。それは哲学史を〈デカルトの糸〉・〈カントの糸〉・〈マルクスの糸〉の３本から成る撚糸と捉える理論だ。こうした史的理説を具体的なテクスト読解にもとづいて構築すること，ここに〈カントの糸〉の耀きがある。

第３に本連載は，とくに第17・18回で見られたとおり，近代と対決する。第２回で「〈近代と向き合う〉というモチーフへふたたび薪をくべること」を「本論のやりたいこと」のひとつとしたが，この作業もきっちり遂行した。そしてそれによって《近代的な哲学の反復を抜け出すべし》という当為が取り出された。本連載は〈マルクスの糸〉の作品でもある。

以上のように本連載はそれが語るところをそれ自体で実践する。だがそれだけでない。同時に――ここからが二重めの話だが――それはそれが語るところから距離をとる。アイロニカルに進む，ということだ。

最後に出てくる「アイロニカル（アイロニー）」について著者は「〈私たちが不可避的に受け入れたりコミットしたりせざるをえない原理や価値観〉にたいして，それでもそれを絶対視せずそこから一歩退いて距離をとる姿勢」というローティの定義を用いて説明するが，恐らくアイロニーと著者に言わせてしまうものの具体的な事象は，第17回で取り上げた藤田正勝の『日本哲学史』にある。著者は第１回の注で『日本哲学史』の「「先を書きたい」というのが本論のモチベーションのひとつである」と告白しているし，また第17回では大森の立ち現れ一元論，廣松の関係主義，中村雄二郎の臨床の知等が京都学派に由来すると述べる藤田の言説に対して《現在の哲学は決して過去のそれとは独立に遂行されているわけではない》と言わざるを得なくなったからである。

けれども，本当に現代日本哲学史は京都学派をはじめとする近代日本哲学史の単なる反復にすぎないのだろうか。看過してはならないのは，ふたたびマルクス的な糸に回帰する途上で大越と竹村の提示するジェンダー論的観点が付加されたのは，近代日本哲学史には見られなかった新しい観点だということである。その観点から，改めて『試論』で取り上げられた女性の論者の議論を，それこそ著者のフィールドである〈生の現場の哲学〉に接続してみてはどうだろうか。これまであまり強調してこなかったが『試論』では他にも池田晶子（第４回），左近寺祥子（第６回），濱田恂子（第17回）という具合に，かなり意識的に女性の論者を取り上げている。『最前線』でも著者は伊藤亜紗を論じている。例えば左近寺の言う「魔の声に身を委ねること」は，竹村の〈自己の内部に存する名づけがたいもの〉に近しくはないか。こうした多彩な声を積み上げることで，決してアイロニカルではない現代日本哲学史が展望されるのではないかと考える。

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