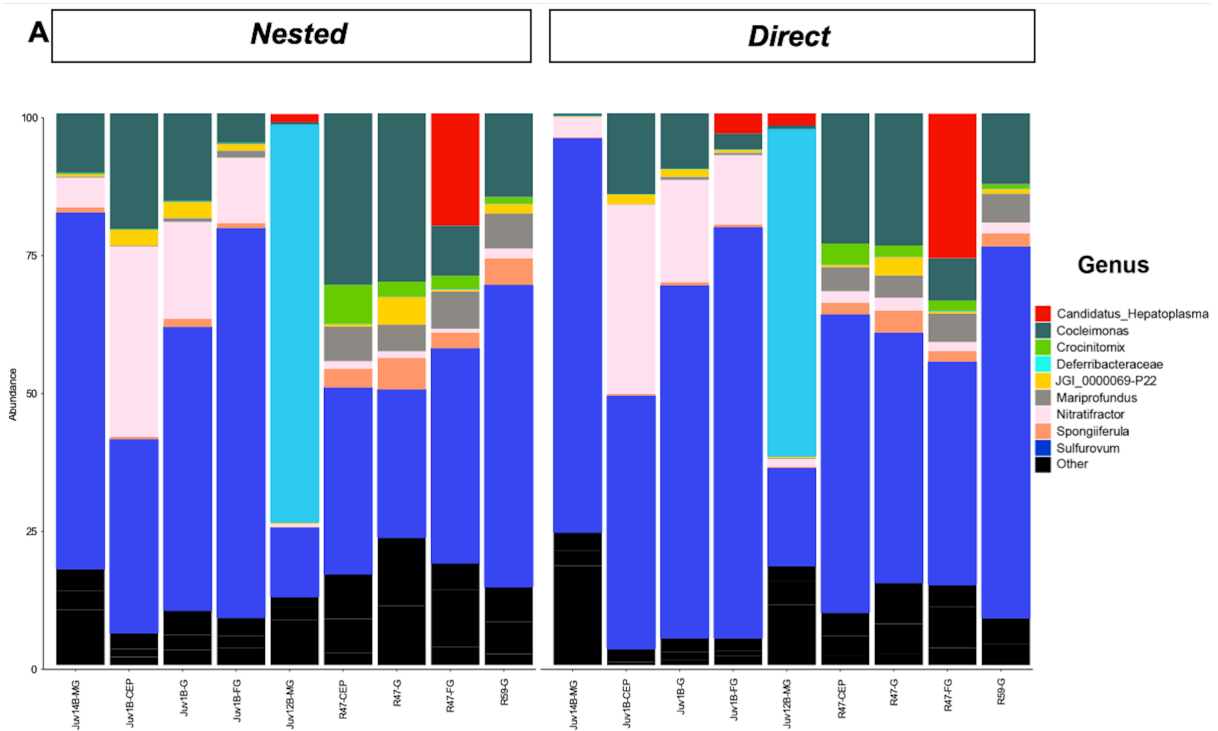


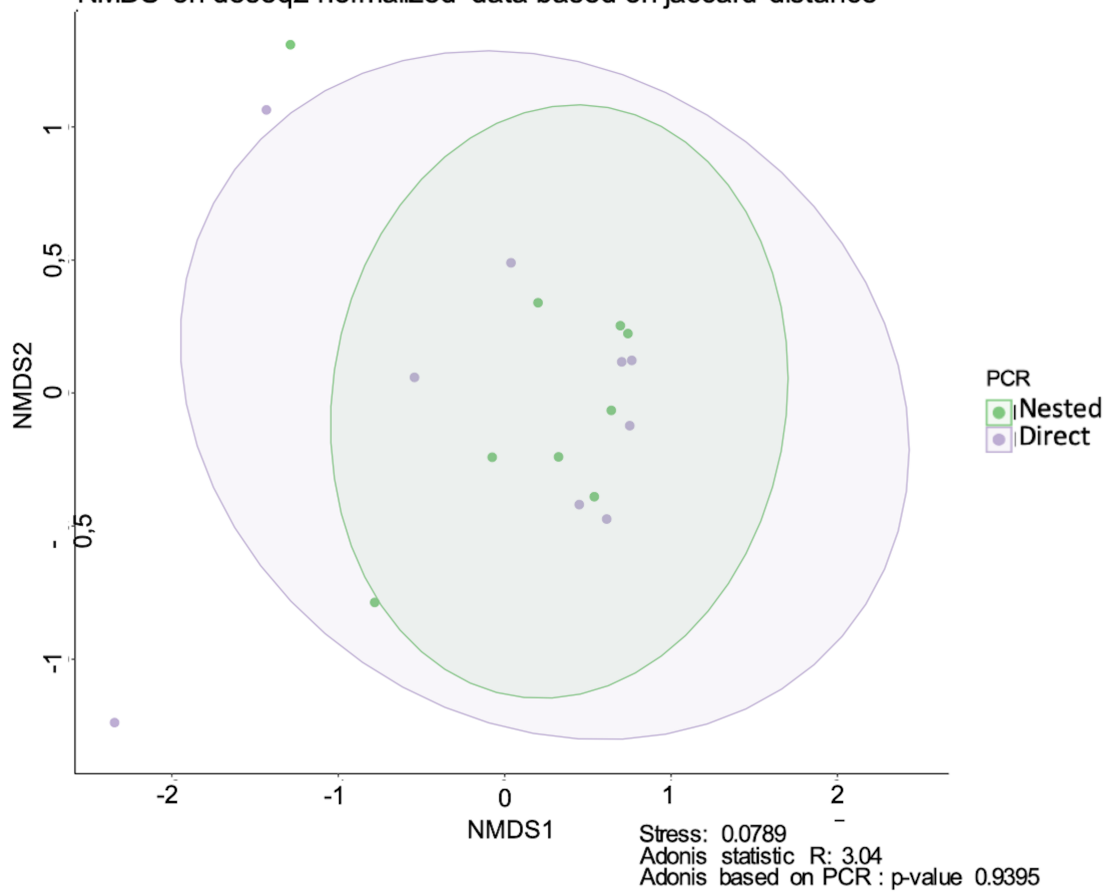
1 Supplementary Figures: Symbiont acquisition strategies in post-
2 settlement stages of two co-occurring deep-sea *Rimicaris* shrimp.

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4 Supplementary Figure 1:

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6 **PCR comparison results. (A)** Bacterial taxonomic composition at the genus-level grouped by
7 PCR approaches of juvenile *A. R. exoculata* symbiotic tissues through direct (9 right hand side
8 bars) and nested PCR (9 left hand side bars in the same order than the 9 on the right) same
9 sample in the same order. **(B)** NMDS plot of Jaccard distance between the bacterial diversity
10 amplified samples, colored according to the PCR used. Ellipses represent 95% confidence
11 interval for each group. G : Gills; CEP : Cephalothoracic cavity; MG : Midgut tube; FG : Foregut.



B NMDS on deseq2 normalized data based on jaccard distance



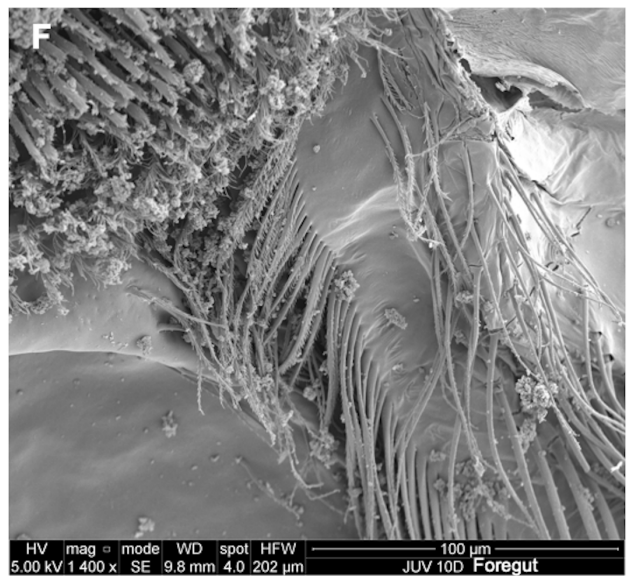
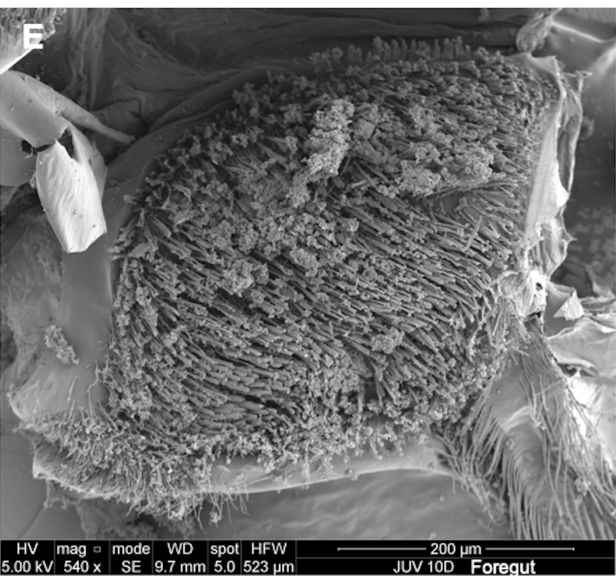
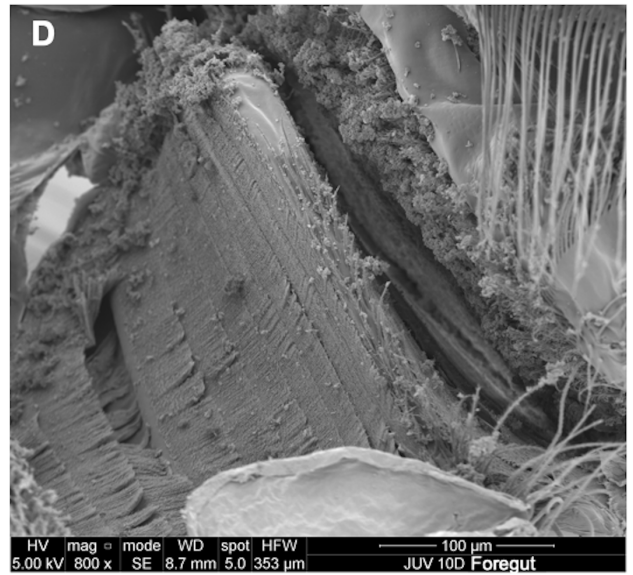
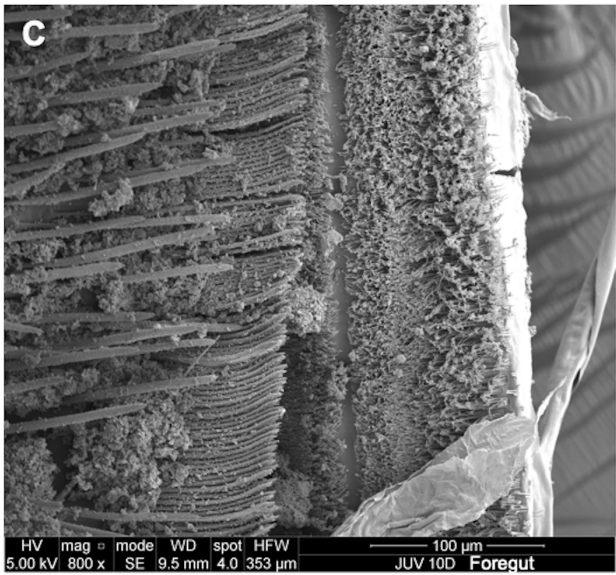
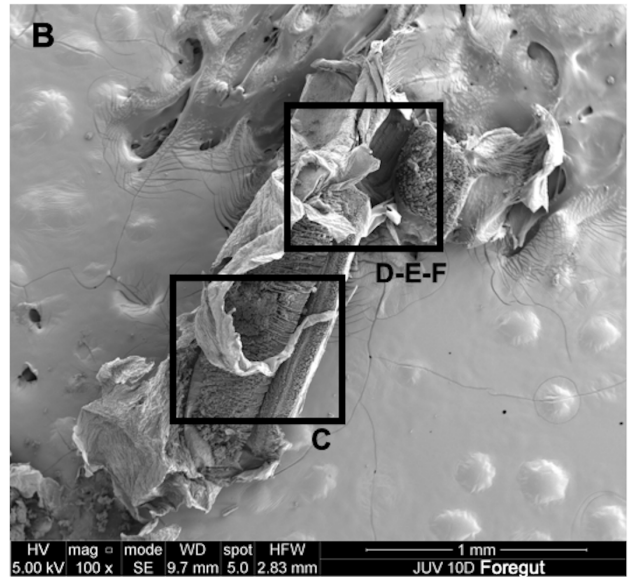
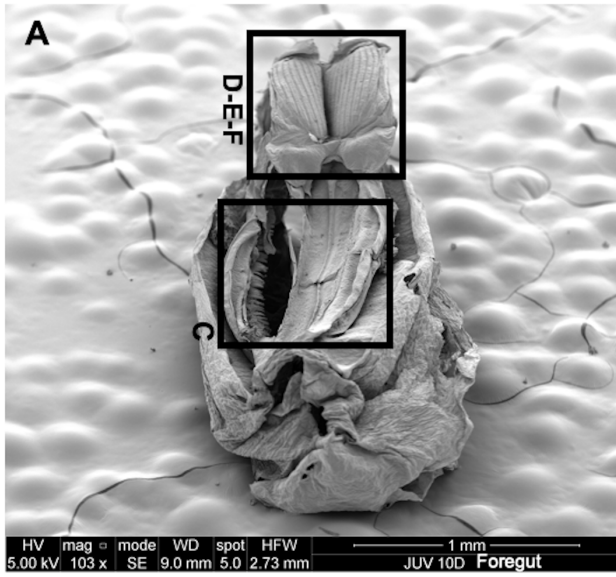
13 Supplementary Figure 2:

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15 **More details on the structures of the cardiac and pyloric chambers of *R. exoculata* subadult**
16 **specimen with Scanning Electron Microscopy and beta diversity. (A)** General structure of the
17 cardiac and pyloric chambers in ventral view. Black squares represent a focus on the cardiac
18 floor crest and on the diverse elements of the pyloric chamber. **(B)** General structure of the
19 cardiac and pyloric chambers in dorsal view. Black squares represent a focus on the cardiac
20 floor crest and on the diverse elements of the pyloric chamber. **(C)** Dorsal view of the cardiac
21 floor crest with its setae (serrulate setae, setae of the unpaired anterior ossicles). **(D)** Pyloric
22 filter with the setae of the ossicle' layers. **(E)** Setae of the lateral walls of the pyloric chamber.
23 **(F)** Setae of the dorsal side of the pyloric chamber.

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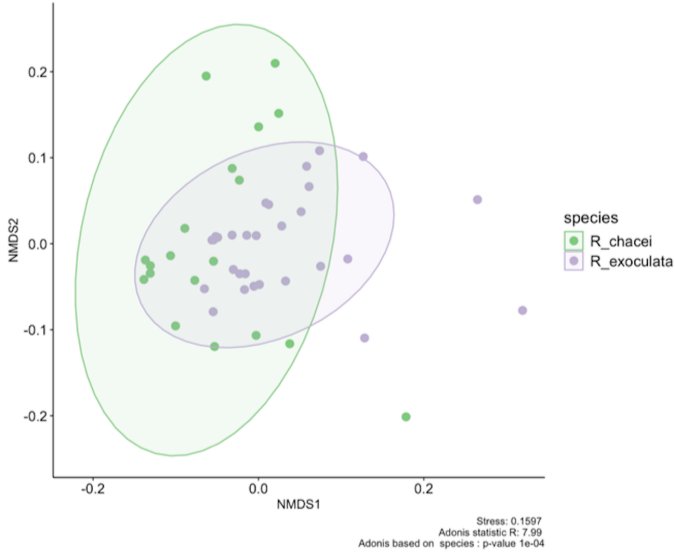


27 Supplementary Figure 3:

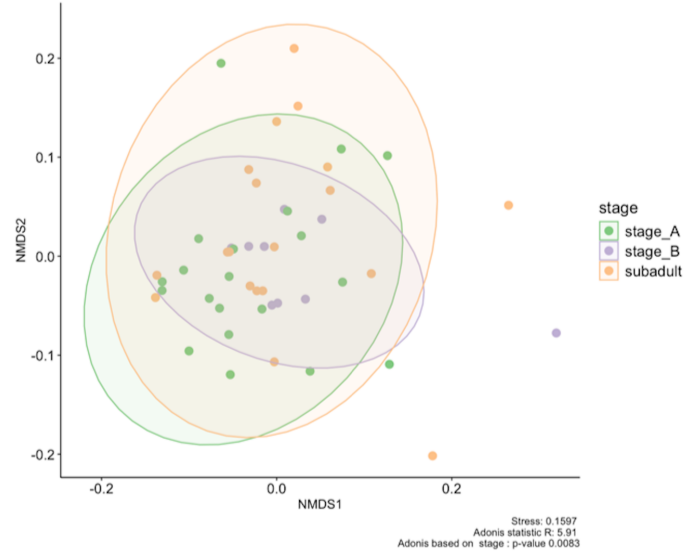
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NMDS plots of Jaccard distance according to the species and life stage. (A) NMDS plot of Jaccard distance between foregut samples colored according to the species. Stress : 0.1597; Adonis statistic R : 7.99; Adonis based on species : p-value 1e-04. **(B)** NMDS plot of Jaccard distance between foregut samples colored according to the life stages. Stress : 0.1597; Adonis statistic R : 5.91; Adonis based on stage : p-value 0.0083. **(C)** NMDS plot of Jaccard distance between midgut tube samples colored according to the species. Stress : 0.2031; Adonis statistic R : 5.77; Adonis based on species : p-value 1e-04. **(D)** NMDS plot of Jaccard distance between midgut tube samples colored according to the life stages. Stress : 0.2031; Adonis statistic R : 6.06; Adonis based on stage : p-value 5e-04. **(E)** NMDS plot of Jaccard distance between cephalothorax samples colored according to the species. Stress : 0.1293; Adonis statistic R : 11.34; Adonis based on species : p-value 1e-04. **(F)** NMDS plot of Jaccard distance between cephalothorax samples colored according to the life stages. Stress : 0.1293; Adonis statistic R : 5.73; Adonis based on stage : p-value 0.0457. Ellipses represent 95% confidence interval for each group.

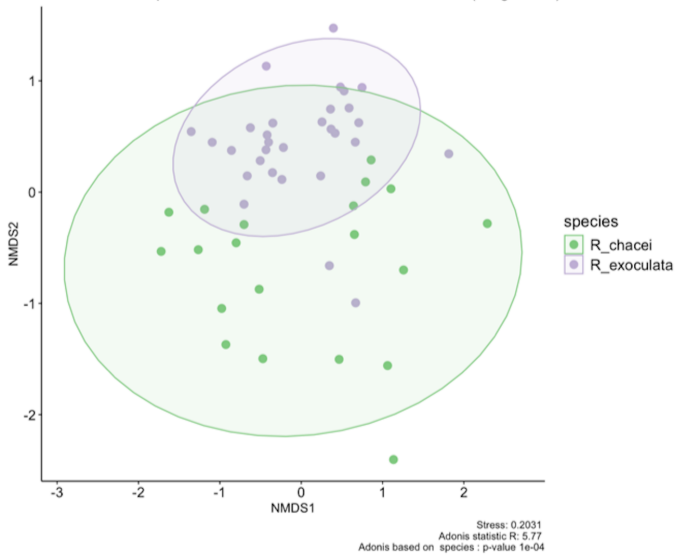
A NMDS on DESeq2 normalized data based on Jaccard distance (foregut).



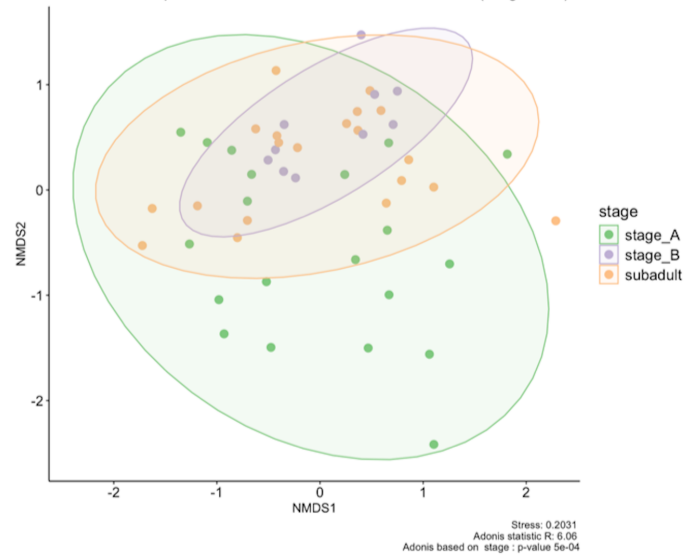
B NMDS on DESeq2 normalized data based on Jaccard distance (foregut).



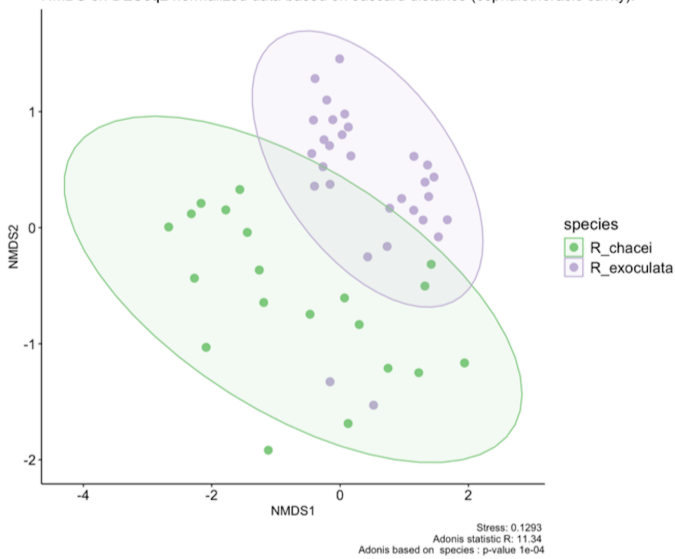
C NMDS on DESeq2 normalized data based on Jaccard distance (midgut tube).



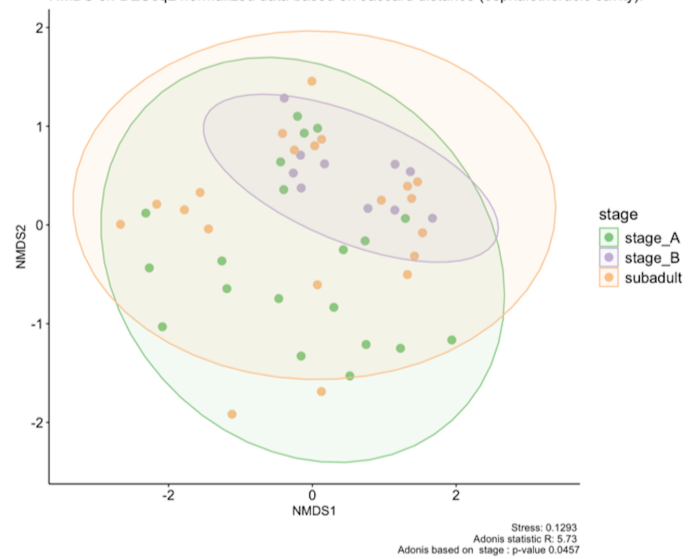
D NMDS on DESeq2 normalized data based on Jaccard distance (midgut tube).



E NMDS on DESeq2 normalized data based on Jaccard distance (cephalothoracic cavity).



F NMDS on DESeq2 normalized data based on Jaccard distance (cephalothoracic cavity).



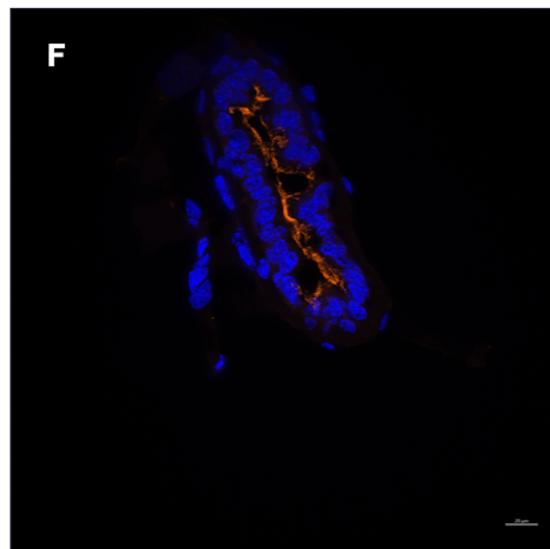
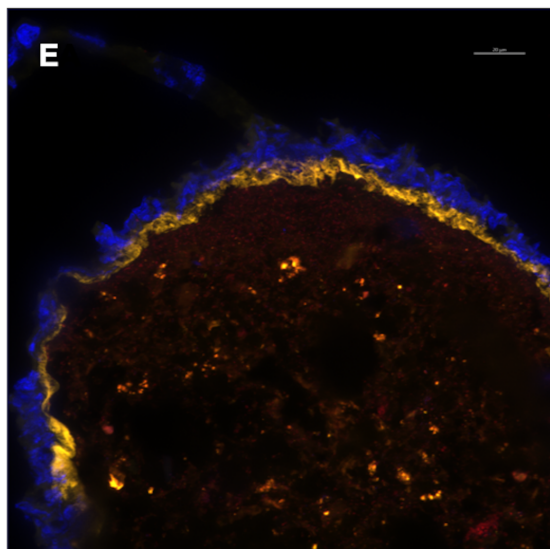
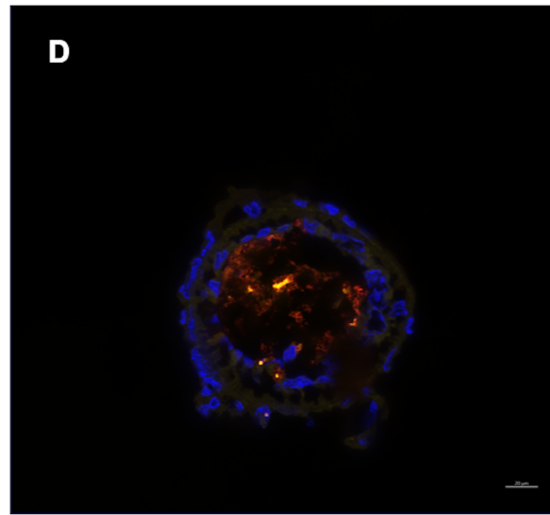
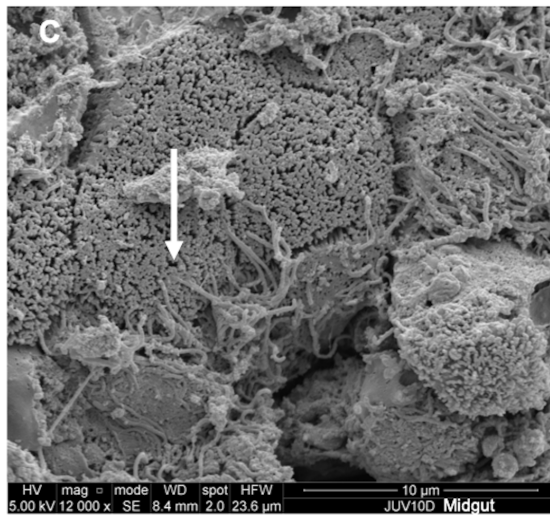
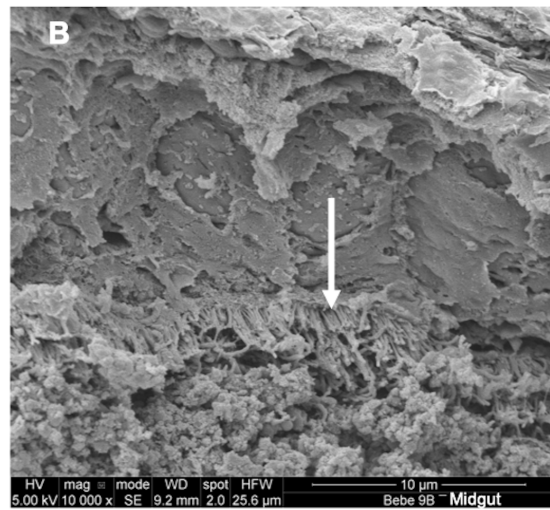
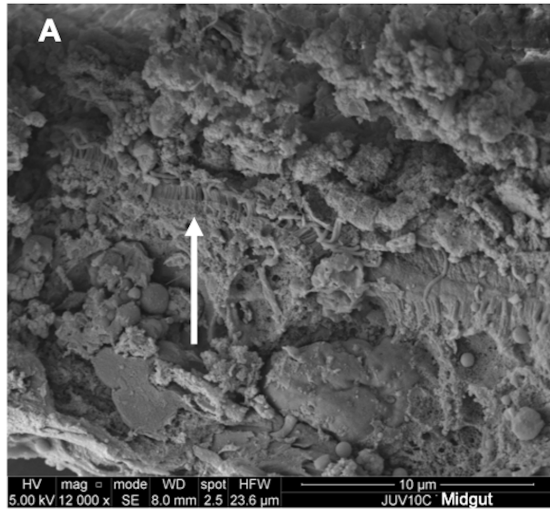
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56 Supplementary Figure 4:

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58 **More details on the midgut tube with Scanning Electron Microscopy (A, B and C),**
59 **Fluorescent *in situ* Hybridization (D and F) and beta diversity (C). (A)** Microvilli (white arrow)
60 observed in the midgut tube of a *R. exoculata* stage B. **(B)** Microvilli (white arrow) observed in
61 the midgut tube of a *R. chacei* subadult. **(C)** Microvilli (white arrow) observed in the midgut
62 tube of a *R. exoculata* subadult. **(D)** Autofluorescence of minerals contained in the alimentary
63 bolus was observed in the midgut tube of a *R. exoculata* stage A from TAG (yellow and red).
64 **(E)** *Candidatus* Microvillspirillaceae of the midgut tube with the alimentary bolus of a *R. chacei*
65 subadult from Snake Pit co-hybridized with the specific probes Def1229-Cy3 and Eub338-Cy5
66 (yellow, light-orange). Autofluorescence of minerals contained in the alimentary bolus was
67 observed in yellow and red. **(F)** *Candidatus* Microvillspirillaceae of the midgut tube of a *R.*
68 *exoculata* stage B from Snake Pit hybridized with the specific probe Def1229-Cy3 (orange). **(D-**
69 **F)** Tissue cell nuclei are labelled with DAPI (blue). Scale bars = 20 µm.



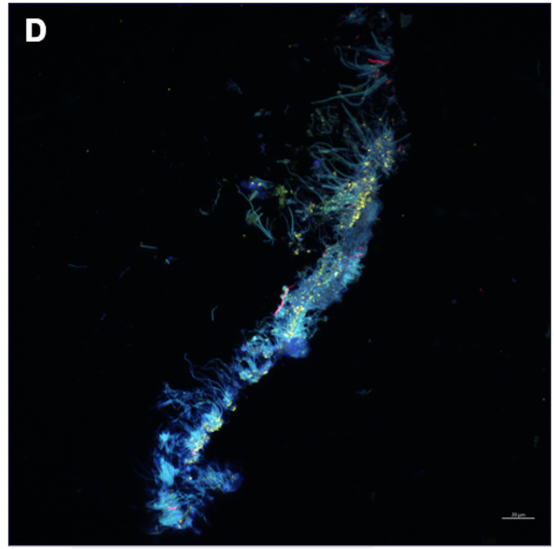
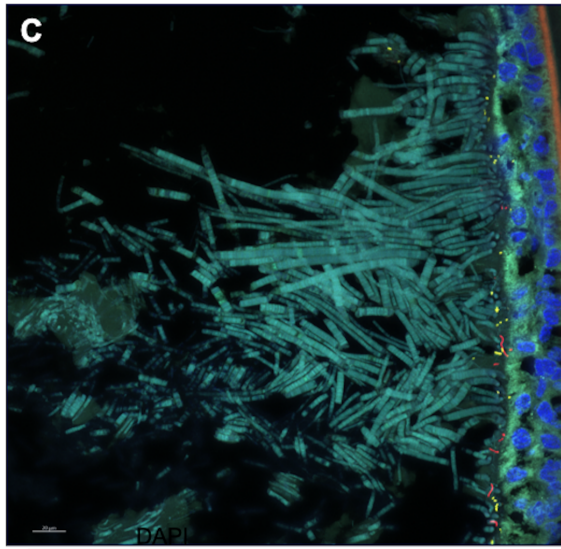
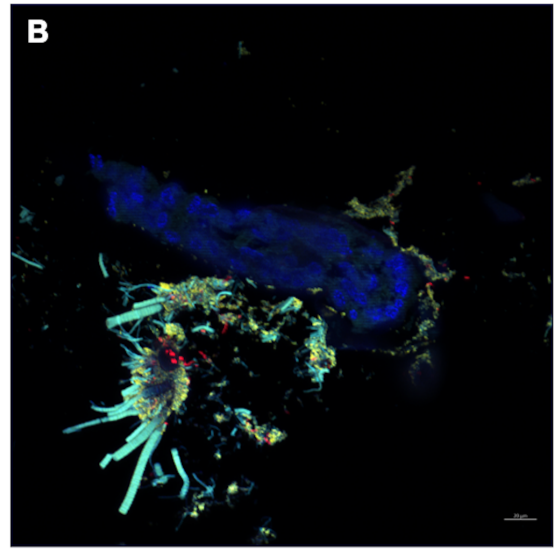
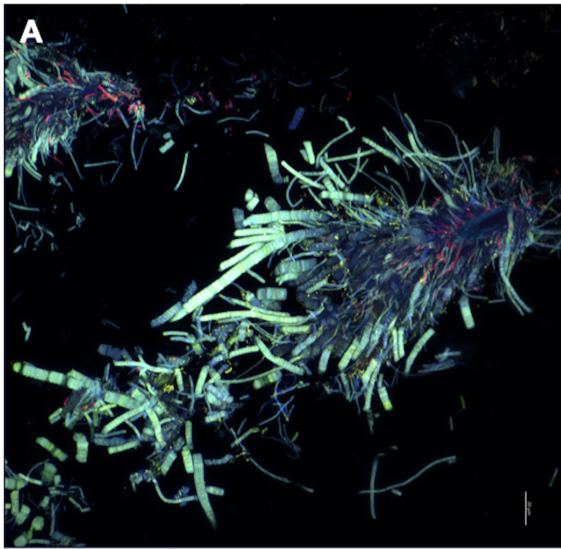
■ DAPI ■ Eub338-Cy5 + Def1229-Cy3 (E) ■ Def1229-Cy3 (F)
■ ■ Autofluorescence of minerals in the alimentary bolus (D/E)

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72 Supplementary Figure 5:

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74 **More details on the cephalothoracic symbiosis.** Using FISH, *Gammaproteobacteria* were
75 hybridized with the specific probe GAM42a, *Campylobacterales* with Epsy549,
76 *Zetaproteobacteria* with Zeta709, *Bacteroidia* with CF319a and *Desulfobulbales* with DSB706.
77 **(A)** Bacteria on setae of a *R. chacei* subadult from Snake Pit hybridized with the specific
78 Epsy549-ATTO488 (green), GAM42a-Cy5 (red) and CF319a-Cy3 (yellow). **(B)** Bacteria on
79 scaphognathites of a *R. chacei* subadult from Snake Pit hybridized with the specific Epsy549-
80 ATTO488 (green), GAM42a-Cy5 (red) and CF319a-Cy3 (yellow). **(C)** Bacteria on
81 branchiostegites of a *R. exoculata* subadult from Snake Pit hybridized with the specific probes
82 Epsy549-ATTO488 (green), GAM42a-Cy5 (red) and DSB706-Cy3 (yellow). **(D)** Bacteria in the
83 cephalothoracic cavity of a *R. chacei* subadult from Snake Pit hybridized with the specific
84 probes Epsy549-ATTO488 (blue-green), GAM42a-Cy5 (red) and Zeta709-Cy3 (yellow). **(B-D)**
85 Tissue cell nuclei were labelled with DAPI (blue). Scale bars = 20 μm .



■ DAPI
■ CF319a-Cy3 (A/B) / DSB706-Cy3 (C) / Zeta709-Cy3 (D)

■ ■ Epsy549-ATTO488 (A/B-C-D)
■ GAM42a-Cy5 (B/C/D) (A/B/C/D)

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