

Supplemental Material: specimen information

Table 1: Specimen data.

ID	ocean region	location	latitude	longitude	date collected	quality status
FM16644	NE Atlantic	Canary Islands	28.591940	-17.920910	5/14/2023	high quality
KM5632	SW Pacific	Tasmania	-41.863900	148.286500	1/14/2023	moderate quality
KM5633	SW Pacific	Tasmania	-41.863900	148.286500	1/14/2023	moderate quality
KM5634	SW Pacific	Tasmania	-41.863900	148.286500	1/14/2023	moderate quality
KM5635	SW Pacific	Tasmania	-41.863900	148.286500	1/14/2023	moderate quality
KM5636	SW Pacific	Tasmania	-41.863900	148.286500	1/14/2023	moderate quality
OA-190531-1	SW Pacific	New South Wales	-33.891500	151.276700	12/15/2019	high quality
OA-Bluebottle	SW Pacific	New South Wales	-33.920300	151.258100	1/1/2022	moderate quality
WAMZ88480	E Indian	Western Australia	-31.908144	115.754811	8/3/2018	high quality
WAMZ97900	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97901	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97902	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97903	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97906	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97907	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97908	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97910	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97911	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97914	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97916	E Indian	Western Australia	-31.855786	115.751741	4/19/2019	high quality
WAMZ97917	SW Pacific	New South Wales	-33.787002	151.288609	1/18/2019	high quality
WAMZ97920	SW Pacific	New South Wales	-33.987424	151.231329	2/5/2018	high quality
WAMZ97921	SW Pacific	Queensland	-26.784003	153.140596	1/19/2019	high quality
WAMZ97923	SW Pacific	Queensland	-26.784003	153.140596	1/19/2019	high quality
YPM-IZ-104460	NW Pacific	Guam	13.427861	144.798518	11/23/2018	high quality
YPM-IZ-104461	NW Pacific	Guam	13.427861	144.798518	11/23/2018	high quality
YPM-IZ-104464	NW Pacific	Guam	13.427861	144.798518	11/23/2018	high quality
YPM-IZ-104465	NW Pacific	Guam	13.427861	144.798518	11/23/2018	high quality
YPM-IZ-106919	NW Pacific	Japan	35.307390	139.480651	11/19/2020	high quality
YPM-IZ-106920	NW Pacific	Japan	35.307390	139.480651	11/19/2020	high quality
YPM-IZ-106923	NW Pacific	Japan	35.307390	139.480651	11/19/2020	high quality
YPM-IZ-106935	Gulf of Mexico	Texas	29.19532	-94.8429383	3/2/2016	high quality
YPM-IZ-106936	Gulf of Mexico	Texas	29.19532	-94.8429383	3/3/2016	high quality
YPM-IZ-106937	Gulf of Mexico	Texas	29.19532	-94.8429383	3/3/2016	high quality
YPM-IZ-106941	NW Atlantic	Bermuda	32.323333	-64.656300	5/18/2019	high quality
YPM-IZ-106943	NW Atlantic	Bermuda	32.341117	-64.669133	5/18/2019	high quality
YPM-IZ-106954	NW Atlantic	Bermuda	32.367233	-64.714550	5/20/2019	high quality
YPM-IZ-106958	Gulf of Mexico	Texas	29.195320	-94.842938	3/18/2017	high quality
YPM-IZ-110251	NW Atlantic	Florida	25.737060	-80.152790	12/22/2022	high quality

Table 1: Specimen data. (*continued*)

ID	ocean region	location	latitude	longitude	date collected	quality status
YPM-IZ-110876	Gulf of Mexico	Texas	29.260000	-94.840000	3/19/2017	high quality
YPM-IZ-110877	Gulf of California	Mexico	27.245000	-111.500000	6/6/2007	high quality
YPM-IZ-110878	Gulf of California	Mexico	27.326667	-111.480000	6/9/2006	high quality
YPM-IZ-110880	NW Atlantic	Northeast US	41.149290	-71.481140	8/23/2023	high quality
YPM-IZ-110881	Central Pacific	Hawai'i	19.666667	-156.083333	4/10/2023	high quality
YPM-IZ-110882	Central Pacific	Hawai'i	19.666667	-156.083333	4/10/2023	high quality
YPM-IZ-110883	Central Pacific	Hawai'i	19.666667	-156.083333	4/10/2023	high quality
YPM-IZ-110906	Central Pacific	NW Hawaiian Islands	26.723056	-164.766667	8/23/2023	high quality
YPM-IZ-110907	Central Pacific	NW Hawaiian Islands	26.080000	-176.470000	8/22/2023	high quality
YPM-IZ-110925	NW Pacific	Japan	28.404780	129.454826	2/4/2023	high quality
YPM-IZ-110926	NW Pacific	Japan	35.309561	139.478820	4/10/2023	high quality
YPM-IZ-110930	NW Pacific	Japan	35.309561	139.478820	4/30/2023	high quality
YPM-IZ-110931	NW Pacific	Japan	35.309561	139.478820	5/19/2023	high quality
YPM-IZ-110933	NW Pacific	Japan	35.309701	139.478831	7/20/2023	high quality
YPM-IZ-110937	NW Pacific	Japan	35.309561	139.478820	7/21/2023	high quality
YPM-IZ-110938	NW Pacific	Japan	35.309701	139.478831	9/22/2023	high quality
YPM-IZ-110943	NW Pacific	Japan	35.134935	140.284606	5/19/2023	high quality
YPM-IZ-110972	NE Atlantic	Ireland	51.83707	-10.19556	10/8/2023	high quality
YPM-IZ-111006	W Indian	South Africa	-27.539919	32.678650	8/8/2023	high quality
YPM-IZ-111007	W Indian	South Africa	-27.539919	32.678650	8/8/2023	high quality
YPM-IZ-111008	W Indian	South Africa	-27.539919	32.678650	8/8/2023	high quality
YPM-IZ-111009	W Indian	South Africa	-27.539919	32.678650	8/8/2023	high quality
YPM-IZ-111010	W Indian	South Africa	-27.539919	32.678650	8/8/2023	high quality
YPM-IZ-111012	NW Atlantic	Bermuda	32.307800	-64.750500	3/8/2022	high quality
YPM-IZ-111013	NW Atlantic	Bermuda	32.307800	-64.750500	3/8/2022	high quality
YPM-IZ-111014	NW Atlantic	Bermuda	32.307800	-64.750500	3/9/2022	high quality
YPM-IZ-111016	NW Atlantic	Bermuda	32.307800	-64.750500	3/9/2022	high quality
YPM-IZ-111017	NW Atlantic	Bermuda	32.307800	-64.750500	3/9/2022	high quality
YPM-IZ-111018	NW Atlantic	Bermuda	32.307800	-64.750500	3/9/2022	high quality
YPM-IZ-111020	NW Atlantic	Bermuda	32.307800	-64.750500	9/1/2020	high quality

Specimen photos

The following arrays of photos show specimens upon collection (left) and after ethanol fixation (right), when both views are available.

cluster A

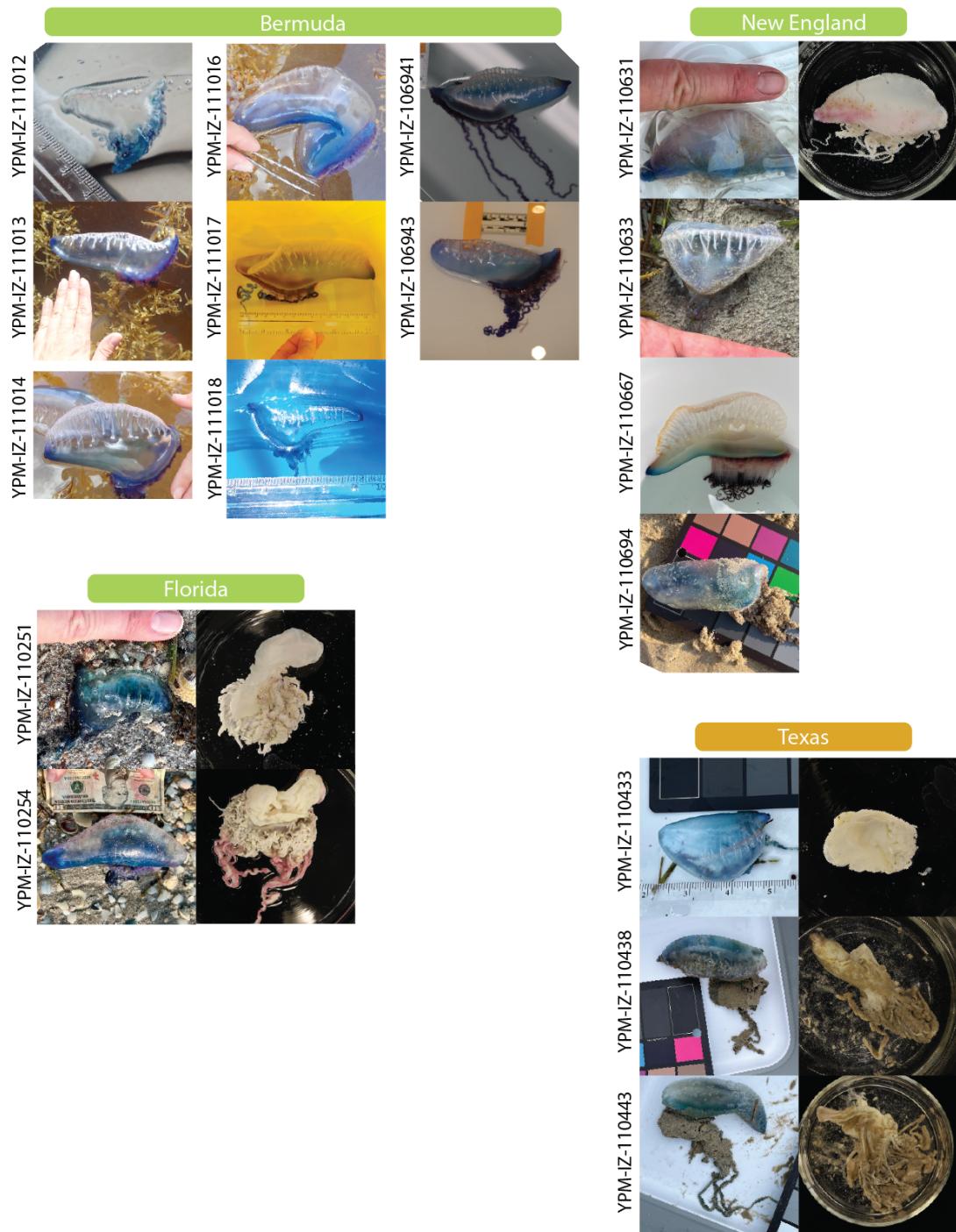


Figure 1: Specimen photos: cluster A from the NW Atlantic.

cluster A

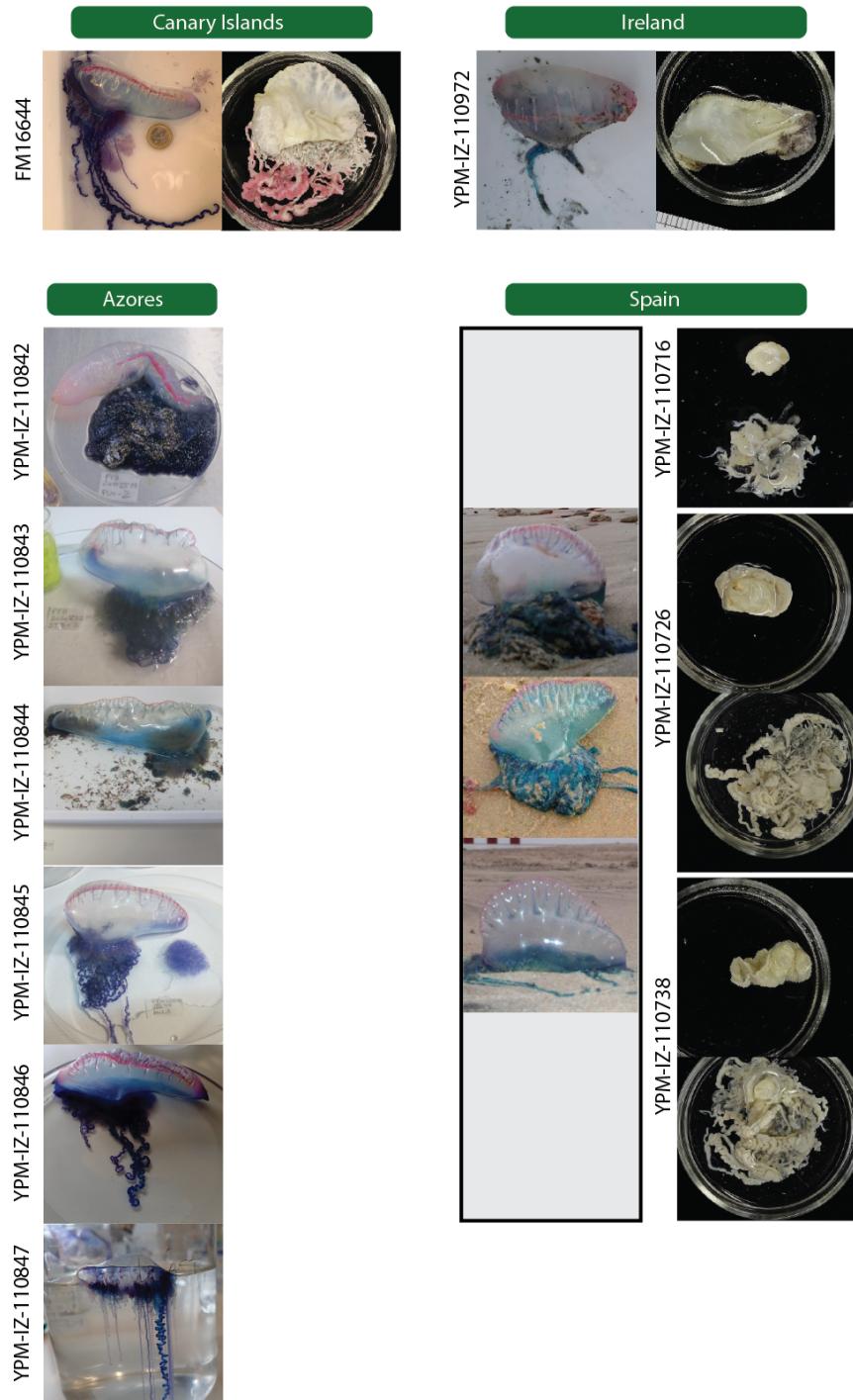


Figure 2: Specimen photos: cluster A from the NE Atlantic.

cluster B1

Hawai'i

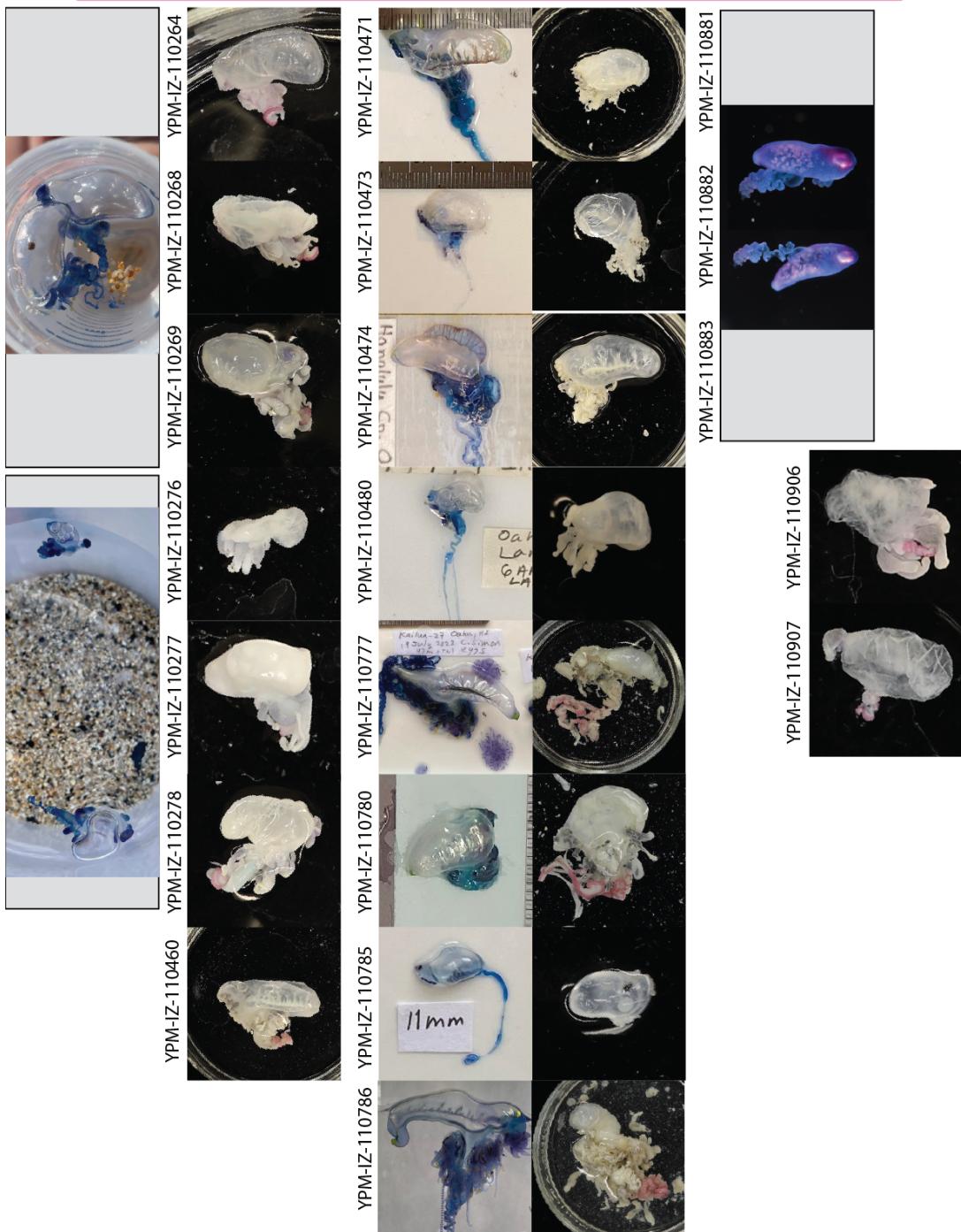


Figure 3: Specimen photos: cluster B1 from Hawai'i and the NW Hawaiian Islands.

cluster B1

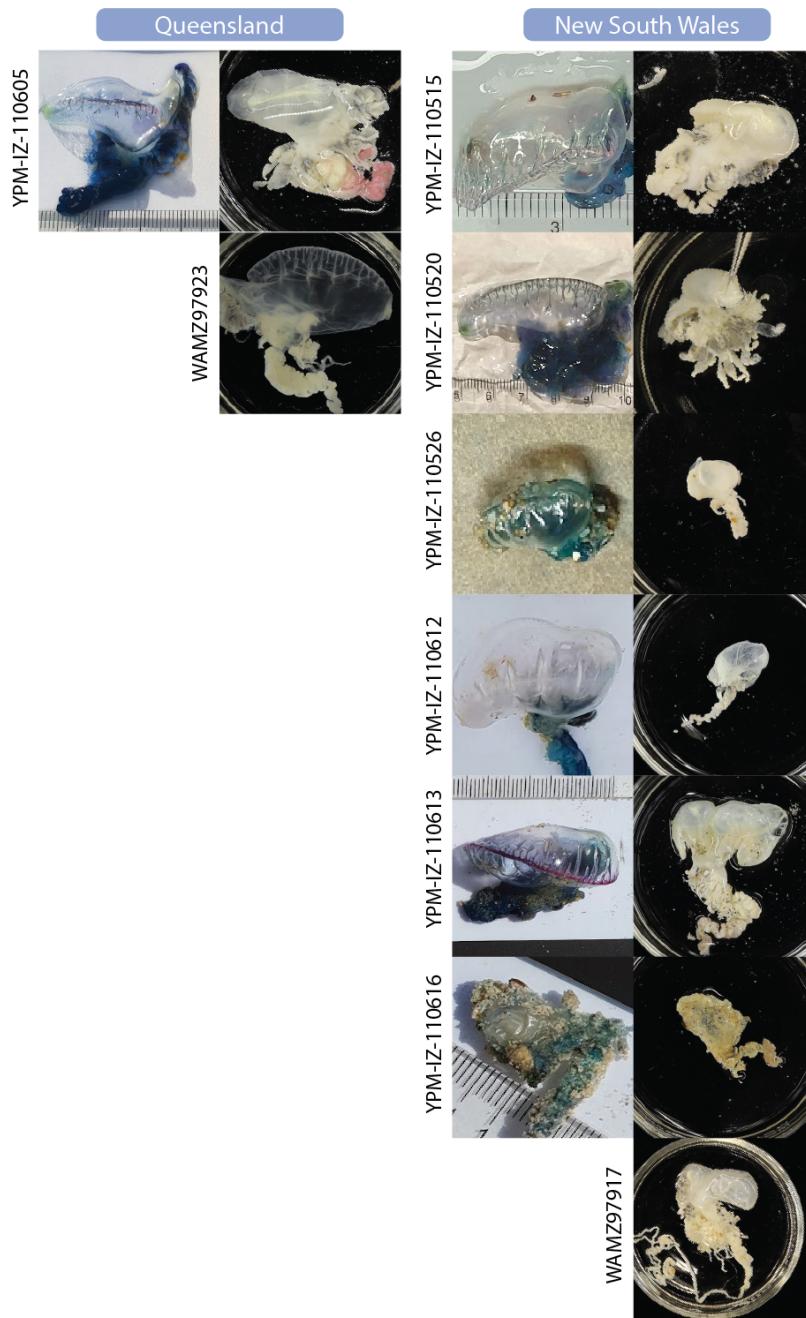


Figure 4: Specimen photos: cluster B1 from E Australia.

cluster B1

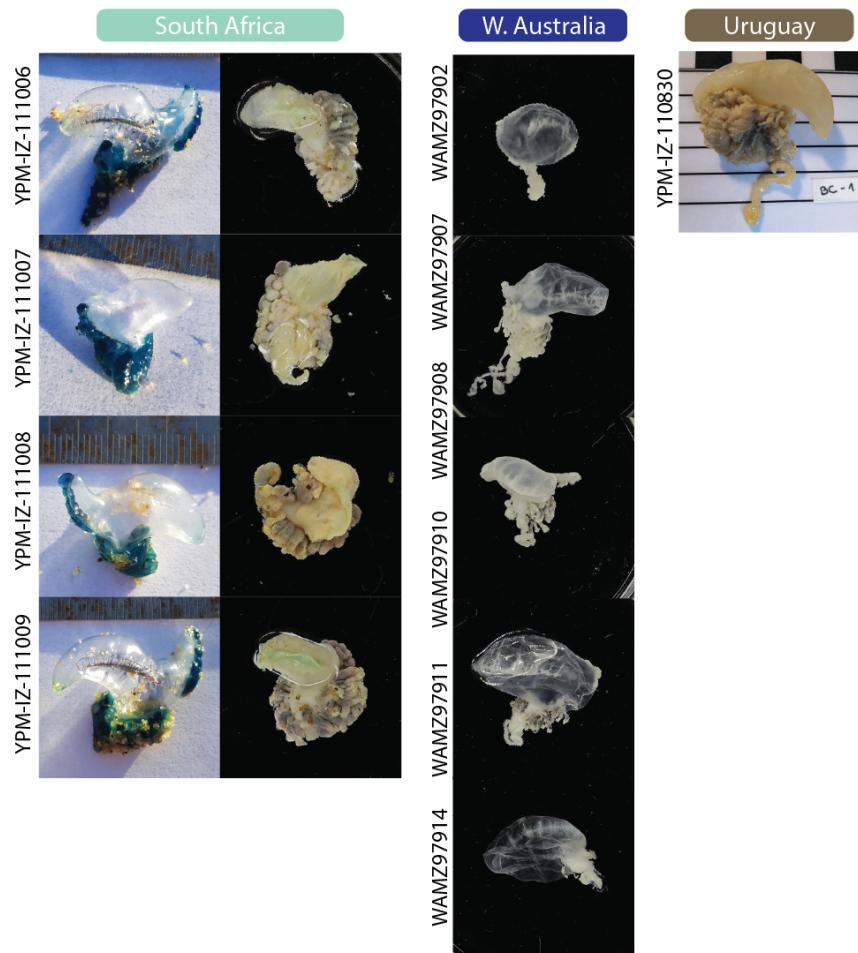
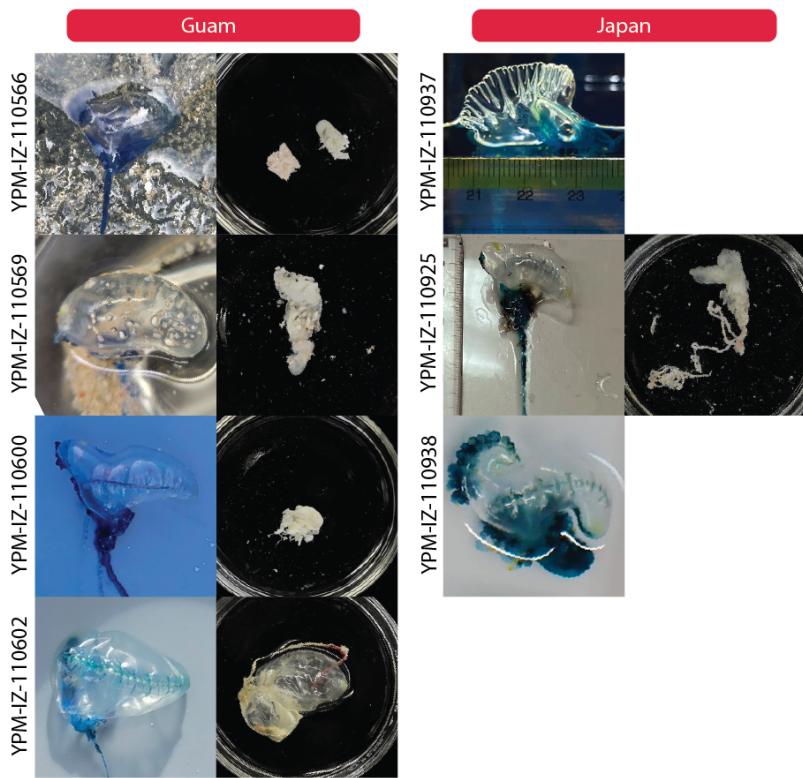


Figure 5: Specimen photos: cluster B1 from the S Indian and S Atlantic.

cluster B1



cluster B2

Gulf of California

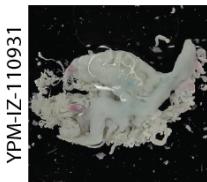


Figure 6: Specimen photos: cluster B1 from the NW Pacific, and cluster B2.

cluster C1

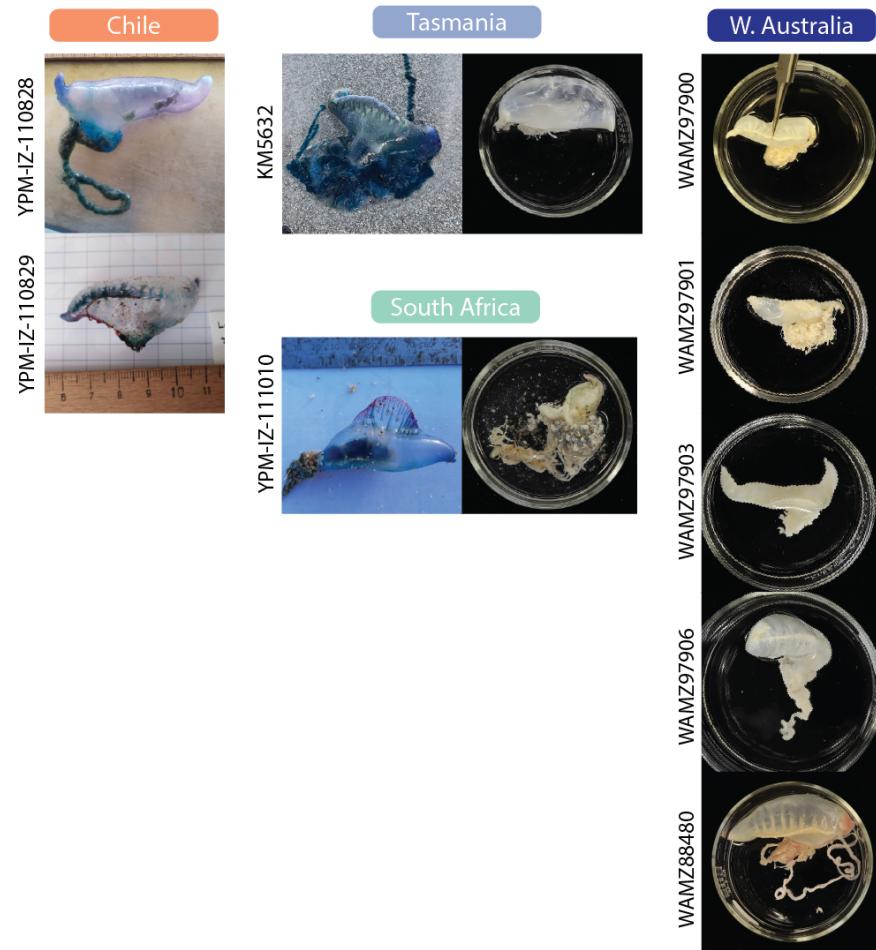


Figure 7: Specimen photos: cluster C1.

cluster C2

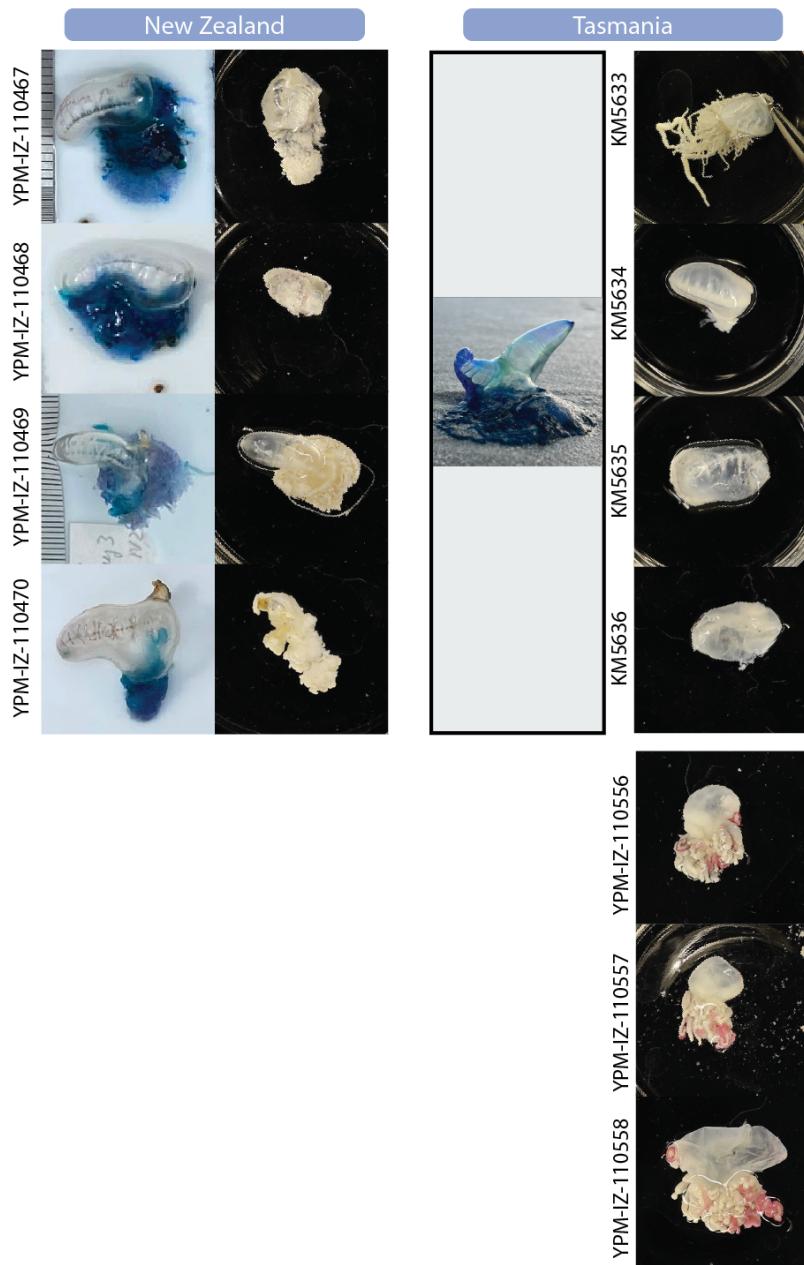


Figure 8: Specimen photos: cluster C2.