

## **SITE R700**

This site had a bed of fine muddy sand and a rich benthic community when photographed in August 1996. There is evidence of very slight bed-modification by oscillatory benthic currents which move NW - SE, but no evidence of large-scale sediment-advection: there is considerable bioturbation. There were dense populations of white brittle stars (*Ophiecten gracilis*) and tube-dwelling cerianthid anthozoans. Many of the anthozoans were withdrawn or partially-withdrawn at the time of the photographs, but no instrumental benthic current data are available for this site at the time of photography and so the behaviour of the animals cannot be correlated with known current flow. Comparison with surface current data derived from tide tables and tidal-stream atlases is too unreliable to be conclusive. Twenty-five photographs were taken in August 1996.

Reference No: *II/54/3/11A*:

Site:	R700
Cruise:	Challenger CH128B
Position:	56° 30.94' N
	09° 10.28' W
Depth:	668 m
Date:	4th August 1996.
Time:	19:47:04 GMT

This shows a bed of fine muddy sand, the surface of which has been much disturbed by the ploughing movements of irregular sea-urchins (probably *Spatangus raschi*). The crests of these tracks have been modified slightly by weak oscillatory currents flowing NW - SE. There are many tube-dwelling cerianthid anthozoans, but perhaps half of the population has withdrawn into its tubes: those with arms still extended are facing generally upwards or leaning slightly towards the SW. Benthic current strength and direction at the time of photography are not known. There are many white brittle stars, *Ophiocten gracilis*, (disc-diameter up to 1 cm approx., overall diameter up to 3 – 5 cm approx.), a sea star, probably *Pontaster tenuispinus*, (overall diameter 10 cm approx.) and two regular sea urchins, *Echinus* sp. (test-diameter 3 cm approx.) visible grazing the surface of the sediment. The view looks towards the NW.



Reference No: *II/54/4/17A*:

Site:	R700
Cruise:	Challenger CH128B
Position:	56° 30.94' N 09° 10.22' W
Depth:	664 m
Date:	4th August 1996.
Time:	19:53:08 GMT

This shows a bed of fine muddy sand, the surface of which has been disturbed by the feeding activities of the benthos. There is very little evidence of bed-reworking by benthic currents, but there are several shallow depressions 15 – 20 cm in diameter: the origins of the latter are unexplained. The "plough" marks near the top left were probably made by the irregular sea urchin *Spatangus raschi*. There are many tube-dwelling cerianthid anthozoans, but some have withdrawn into their tubes: those with arms still extended are facing generally upwards or slightly towards the SSW. There are some *Ophiocten gracilis*, (disc diameter up to 1 cm approx., overall-diameter up to 3 – 5 cm). The white-reflecting objects are particles of "snow" in the water. The view looks towards the NW.



Reference No: **II/54/6/29A:**

Site: R700  
Cruise: Challenger CH128B  
Position: 56° 30.94' N  
09° 10.16' W  
Depth: 661 m  
Date: 4th August 1996.  
Time: 20:06:34 GMT

This shows a bed of fine muddy sand, the surface of which has been much disturbed, mainly by the feeding activities of sea-urchins. There is little incontrovertible evidence of bed-reworking by benthic currents: however, the ripple bifurcation (bottom left) possibly originates from oscillatory near-bottom currents, or biological activity, or both. Similarly, sharp ripple crests near the centre of the picture indicate weak oscillatory currents moving NNW - SSE. There are many tube-dwelling cerianthid anthozoans, but nearly all have withdrawn into their tubes, which still tend to lean westward. There are a few *Opiocten gracilis*, (disc-diameter up to 1 cm approx., overall-diameter up to 3 – 5 cm). There is an imprint (arm length at least 10 cm) of a large sea star (possibly *Bathybiaster vexilifer*) visible in the top right hand corner. The view looks towards the North.





Reference No: **II/54/3/11A** (part-frame enlargement):

Site:	R700
Cruise:	Challenger CH128B
Position:	56° 30.94' N
	09° 10.28' W
Depth:	668 m
Date:	4th August 1996.
Time:	19:47:04 GMT

This photograph shows tube-dwelling cerianthid anthozoans facing generally upwards; their arms do not appear to be held stiffly in position, (contrast with photograph **II/53/2/9**). The sea star, probably *Pontaster tenuispinus* (10 cm diameter overall), seems from the evidence of sediment displacement behind its arms to be in the process of moving station on the seabed. The reason for the swellings on the dorsal side of the animal is unknown. Old, degraded feeding-tracks of an irregular sea urchin, probably *Spatangus raschi*, deform the sediment surface.





Reference No: **II/54/6/29A** (part-frame enlargement):

Site:	R700
Cruise:	Challenger CH128B
Position:	56° 30.94' N 09° 10.16' W
Depth:	661 m
Date:	4th August 1996.
Time:	20:06:34 GMT

In this photograph, the bed-surface has been reworked by the feeding activities of irregular sea urchins (probably *Spatangus raschi*); the tracks have been degraded and the crests appear to have been reworked by weak oscillatory currents. Tube-dwelling cerianthid anthozoans have withdrawn into their tubes (the nondescript lumps), which incline generally towards the West. There are a few of the white brittlestar *Opiocten gracilis*, (disc-diameter up to 1 cm approx., overall-diameter 3 – 5 cm).

