R.V. TELLINA and R.V. NUCELLA

Report for Cruise 11A/1968

Staff		Duration
H. W. Hill T. C. Doddington	NUCELLA	30 May–13 June
J. W. Talbot J. Wooltorton J. Tipple (part-time)	TELLINA	

Aims

The principal aim of the cruise was a hydrographic survey of the estuary of the river Blackwater. This was to include the following:-

(a) A number of experiments using the dye Rhodamine-B.

(b) Measurement of the turbidity, temperature and salinity distributions.

(c) Measurement of water velocity.

Additional to the work in the Blackwater estuary was:-

(d) A small number of plankton hauls off Sizewell, Orford Ness and Clacton.

(e) The release of sea bed and surface drifters off Orford Ness and Clacton.

Narrative

TELLINA and NUCELLA sailed for the Blackwater on 30 May as originally planned. However the inclusion of the plankton hauls and drifter releases resulted in TELLINA not reaching the Blackwater that day. After completing four plankton hauls off Sizewell and Orford Ness and releasing 50 sea bed and 10 surface drifters, TELLINA spent the night in Felixstowe. TELLINA left Felixstowe early the next morning and carried out two more plankton hauls and released 25 sea bed and 5 surface drifters off Clacton. She then proceeded to West Mersea where Mr. Tipple disembarked and Mr. Talbot joined.

TELLINA made contact with NUCELLA at midday on 31 May and a start was made on installing equipment aboard NUCELLA that afternoon before her crew left for the Whitsun week-end. With the co-operation of TELLINA's crew, and particularly her engineer, the installation of equipment on NUCELLA was completed the following morning. The pneumatic tide gauge was also installed on the power station barrier wall. Having made full preparation for the joint working of the two ships which was to begin on 4 June, TELLINA spent the afternoon of 1 June making turbidity and temperature measurements and taking salinity samples. A small Rhodamine release was made shortly before low water on 2 June in a position close to the Eagle Bank. TELLINA surveyed this release for three hours.

After visiting Felixstowe to replenish her stores and water supply, TELLINA returned to the Blackwater early on the morning of 4 June. Both ships worked that day, TELLINA taking turbidity and temperature measurements over the estuary at both high and low water, and NUCELLA completing a salinity section and making current measurements.

On the morning high water of 5 June TELLINA released 30 gallons of Rhodamine in the main channel of the estuary opposite the power station. Both ships then co-operated in surveying this release until the evening high water.

The two ships again surveyed together on 6 June, concentrating on the conditions at about low water, NUCELLA was particularly useful with her shallow draft for surveying on the flats. TELLINA's part in the investigation was then terminated at short notice in order that she could help in investigating the infection of mussels on the north east coast. She left the Blackwater for Lowestoft at 1700 hours, 6 June after transferring most of her hydrographic equipment to NUCELLA.

Following the recall of TELLINA, Mr. Talbot transferred to NUCELLA and Mr. Wooltorton returned to Lowestoft. NUCELLA completed a survey for Rhodamine at high water on 7 June. This survey showed appreciable concentrations remaining in the estuary and with the co-operation of Mr. Emerson, Station Health Physicist at the Bradwell Nuclear Power Station, arrangements were made for water samples to be collected at the power station on Saturday, Sunday, 8-9 June. NUCELLA again surveyed in the Blackwater estuary and obtained positive results on each day until 13 June, by which date the Rhodamine concentration was only just detectable above background. In addition to the main survey, a current meter station was worked from the dinghy on 10 June in Thirslet Creek, a salinity grid was worked over the dye patch on 11 June, and on 12 June a small Rhodamine release was made in the River Colne, which was followed for 5 hours.

NUCELLA remained in the Blackwater after the end of this cruise in order to carry out other work there for the Burnham laboratory.

Miscellaneous

a) NUCELLA had a noticeably wider turning circle than TELLINA and on one occasion in strong wind, had considerable difficulty in bringing her head into the wind.

b) The V.H.F. walkie-talkie radios were not a successful means of communicating between the two ships. The maximum distance at which communication was established was about 1 mile and even then reception was intermittent. Normally the distance was considerably less.

c) The Toho Denton current meter was tested on a number of occasions during the cruise and gave consistent readings.

H. W. Hill and J. W. Talbot

21 June 1968

Initialled: A. J. L.

Distribution:

Basic list, plus the following:-

Mr. T. Doddington
Mr. J. Talbot
Mr. J. Wooltorton
Mr. J. Tipple