

300 ft) long smooth granite face, inclined at about 60 degrees and which has an overhanging summit. The face is not coincident with the joint planes in the granite as it cut these at about 30 degrees. Neither is there any evidence that the face is that of a joint plane with an eroded dyke.

#### 6. Other Pleistocene Geomorphological Features

During the Pleistocene era there were three principal interglacial periods during which a certain amount of marine erosion took place on the island. All around the coast of the island remnants of the former shorelines can be traced in the form of caves, cliffs, stacks, and small sculptured features. Some of each of these features can be seen at each of the three levels; Cromerian; 60 m (197 ft), Hoxnian; 32 m (105 ft), and Ipswichian; 15 m (50 ft).

Several remnants of raised beach can be traced on the east sideland north of threequarter wall at both the 60 m and 32 m levels. The Mousehole and Trap (137469) is a short tunnel and on the 'beach' nearby is a small arch and a perched block which give rise to the descriptive title. Just south of Gannets Bay is an under eroded block of granite on the 32 m beach. The three main promontories of the island; Surf Point, Shutter Point and North West Point were probably lowered to their present levels during the Hoxnian Interglacial period which was the longest. On the west coast the 'Double Decker Cave', just north of the 'Devil's Slide, is the most obvious feature illustrating a higher sea level. Very obvious stepping of the most of the tors and promontories on the west coast illustrate the effect the higher sea levels have had on degrading the coast line. It is possible that a more detailed and accurate survey of these levels could be made all around the island. This is especially true on the east coast where it might be possible to date the time of the ice eroding the stream valleys, by determining if there are any post date beaches across the valleys.

#### 7. Conclusion

Positively identified features show that at some stage during the Pleistocene period ice played a part in the shaping of Lundy, and proves almost beyond doubt that there was ice in Barnstaple Bay. Other geomorphological features have been mentioned and their possible relation to glacial activity noted. A suggestion has been made to the way in which the age of the ice erosion can be determined, and this is hoped to be the subject of future work.

### ATLANTIC COLLEGE LUNDY PROJECT ANNUAL REPORT FOR 1974

By M. A. McAVITY AND J. M. MENDELSSOHN

During 1974 Atlantic College managed to systematise its visits to Lundy, laying the groundwork for future work there. Although there has been no completely definite work done in the course of this year, a good deal of preliminary work was accomplished and a number of difficulties overcome.

In all the College made seven successful expeditions to the Island, which included 54 days in residence or about 700 man days. Before the first expedition, in March, the Lundy boat, X-23, was launched and it has been the backbone of all these expeditions; indeed after this first year of trials we are poised to make full use of this craft's potential. In its speediest passage X-23 made the journey from Atlantic College to Lundy (40 n.m.), fully loaded and with a 12 man team, in 1 hr 35 min.

The seven visits to Lundy can be divided into three categories—weekend excursions, project weeks and one special ex-student expedition. There were three weekend trips, one in April and two in November. These excursions (we normally aim at 4 or 5 days) are primarily to familiarise the new students with the Island and with the open water diving conditions there. These trips have been enormously helpful in regularising our activities and smoothing out our procedure.

The College has three projects weeks a year, two of them consecutively in the first half of September and the other in March. In addition, for the purpose

of our work on Lundy, we have created two extra project weeks, one in January and the other in July, both coming just before the beginning of College academic terms. This year all these project weeks were used except the one in January which was unfortunately cancelled because of foul weather.

The March project week was an eight day venture with over 25 students. Seven of these were climbing, two were doing an archaeological project under Keith Gardner's supervision and another was doing a botanical survey of the east and west coasts. The remainder were involved directly with the underwater survey. Most of these latter were new to the sea and so it was very largely a time of training. However, some preliminary work was accomplished near Black Rock and in the Landing bay.

In the July project week exploratory dives were made at Seal's rock and on the west coast from St. James' stone northward, which provided us with a start in these interesting areas. However, most of our time was spent trying to do a large horizontal survey of the east coast from the Landing bay northwards to about Halfway wall. An interesting collection of sediments was made but the system of measuring underwater was not accurate enough for even a rough map to be drawn. Indeed one of our most urgent needs is to establish a system of underwater surveying on a large scale and with a good co-ordination with the grid. To this end we are planning to map the boundary between the boulders and mud in Gannet's bay by several different methods as a prelude to localising boundaries between different sediments all around the Island. We have, in fact, made one effort at this already but we were defeated by the elements. A recent purchase of an echo sounder should now aid us in this work.

The September projects weeks were (and usually will be) our time of main investigation but again our activities were severely hampered by the weather. We have made a very hopeful start on a typological series of the most common animals (appendix) and one of our students has done a project collecting and identifying seaweeds. The latter is still being worked on and she is seeking assistance from the British Museum of Natural History. The purpose of these collections is to provide a reference and teaching facility for those students who will go to Lundy in the future. In this and in other ways we expect that our students will be better prepared for work underwater in 1975.

Another by-product of the September trip was a survey in the Landing bay on a radial basis. Starting at the base of the south light cable we moved a 50 m line through a series of 15° steps and then measured the depths and numbers of *Echinocardium cordatum* holes at each new position of the line. The resulting map demonstrated that the sand at the bottom of the Land bay has a few small hills and that the maximum concentration of *Echinocardium* was at 6 m. below chart datum in the south east sector of the circle. The technique was found easy to learn and it would be possible to do a whole circle in one day.

The one remaining expedition was that undertaken by some ex-students of the College in the middle two weeks of June. This group had no direct staff supervision. They were the most experienced group of divers that we have ever sent to Lundy. On this trip they made an extensive initial survey of the east coast from Gannet's rock to Gull rock. This has demonstrated a gradation of sediments and brought to light several interesting bottom features that will form the basis for further more detailed studies. Feedback from this expedition indicated that it was very necessary for us to have the sorts of collections mentioned in the last paragraph to assist us in our work.

In conclusion we might just mention that we have been training deaf people to dive at the College and that three of these have now been to Lundy with us. They are beginning to be a real asset to an improvement of our underwater communications and they have taken a serious interest in the underwater survey.