

Classic landforms of the North Devon coast

P. KEENE

Geography Unit, Faculty of Environment, Oxford Polytechnic, Oxford, OX3 0BP.

To any geologist interested in 'landscapes', North Devon offers a spectacular array of coastal features, the illustration of which would grace the pages of any geomorphology textbook. Yet few of these features have been 'researched' in depth and in many cases interpretation of their mode of formation, age and evolution remain equivocal. To some this inconclusiveness may be frustrating. To others it is a fertile playground for the imagination. As the memoir accompanying the recently published geology map of the district put it when discussing the Croyde district, "the field is wide open to speculation and theory, unencumbered by too rigid a framework of fact".

In this presentation, attention is drawn to longstanding local landform problems, some now ripe for further attention. At the same time the opportunity is taken to briefly luxuriate in the classic physical landscapes in which these problems are set. Problems with potential for research are listed below, together with a physical landscape bibliography drawing attention to literature on the subject to date.

1. The coastal plateaux, commonly listed as at 200, 130 and 85 metres. What is their mode of formation, age and evolution? Are any still considered to relate to Quaternary sea levels?
2. Solifluction (head) provides deep infills in coastal coombes such as Marsland Mouth (SS213174) and Strawberry Water (SS213181), and coastal cliff-foot spreads such as at Westward Ho! (SS423292) and Croyde (SS429398). What is their age and how many episodes do they represent? Are any of these pre-Devensian? Are any of Loch Lomond stadial age?
3. Truncated coastal valleys, such as Speke's Mouth (SS225236), Beckland (SS292267) and Buck's Mills (SS355236) imply rapid coastal recession; but at a rate unknown. Is the 'lower wave energy' coast of Clovelly and Bucks really eroding less quickly than that of Hartland Quay?
4. Some coastal valleys such as that around St Catherine's Tor (SS226242) are devoid of infill. Why?
5. The Gore at Buck's Mills (SS350240). Is it the lag deposit of an ancient rotational slip or a sediment trap in a low wave energy environment? What is the rate of supply of cliff sediments to the littoral sediment system which eventually feeds the pebble ridge at Westward Ho!
6. Shore platforms, such as those to the west of Westward Ho! are up to 300m wide suggesting sea levels periodically revisited and reworked the same shorelines, but the rate at which these were cut is unknown and the age and relationship between the suite of shore platforms has yet to be determined.
7. Raised beaches at Westward Ho!, Appledore, Saunton and Croyde. Are these products of the last interglacial or again reflections of a periodically revisited shoreline? What does the pebble bed at Westward Ho! which lies above the head yet below the blue clay (SS428293) represent?
8. Cliff evolution in relation to periglacial episodes is understood in principle, but the possible complexities introduced by a chain of periglacial episodes has yet to be unravelled.
9. Westward Ho! pebble ridge (SS445295). How recent a feature is this? Can we account for the accumulations of pebbles that must have occurred if this is an ancient feature?

10. Branton Burrows. To what extent is this a relict feature? What is its future and how might this influence dune 'management'?

11. Croyde erratics. Age, provenance, mode of transport and relation to Fremington Till still undecided.

12. Morte Bay. Anomalous situation of the 'bay' being backed by the upstanding resistant Pickwell Down sandstone. Is this a fault-guided coast?

13. Exmoor cliffs. The interrelationship between structure, palaeoclimatic relicts and lithology remains a fascination along this coast. What is the morphological relationship of these cliffs to probable fault control?

Most of these questions have been around for as long as I have been a geographer! Without the prospect of rapid resolution, geomorphology some time ago quite rightly put them onto 'slow burn'. However, one cannot work in this landscape for long without them periodically tugging again at one's imagination.

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