Geological structures exposed.
Shear Zone movement.

John:
Well we've come about four or five kilometres north up the coast now to have a look at quite a famous shear zone.

Nigel:
And I've noticed in the, on the Lewisian gneisses been walking over the dips have been fairly shallow.

John:
Yes, we can see that here, can't we, that there is a banding here, a gneissic banding which is trending roughly parallel to the coast and dipping moderately down to the south.

Nigel:
Yes, so we'd expect that to change in some way if we actually enter the shear zone, which I know we do over here.

John:
Well we've come here into an area with a very different sort of fabric.

Nigel:
Yes, that's clear.

John:
You'd never call this gneissic banding, would you?

Nigel:
No, it's much more vertical and the bands are much finer, platy, I'd say.

John:
Yeah, the whole rocks got this platy appearance, the nature of the planer fabric is much finer bands, and within those bands we can see the streaked-out grains with our defining this to be a Myelenite. We're looking at a thoroughly sheared-up piece of Lewisian gneiss here.

Nigel:
Okay, well we've walked really quite rapidly into this change of orientation and the development of the fabric. Is there anything in this shear zone that might give us a sense of movement?

John:
Well it's just the sort of place where we'd be looking for asymmetric porphyroblasts. We'd be looking for grains with tails that might give us a clue as to the direction of movement. I see plenty of streaked-out grains here, but I don't see too many that are showing much asymmetry.

Nigel:
Okay.

John:
But we've got plenty of shear zone to look at, so let's move around and I'll bet we'll find some. Well this is just what we've been looking for, absolutely wonderful. You've got a collection of quartz and feldspar grains here and they have been streaked-out in the foliation, they've got a tail running out there, a tail running down there, beautiful example of asymmetric tails, and

that is giving us the clearest possible indication that we could want, that the sense of movement on this Myelenite has been in that direction.

Narrator:
The outcrops at this beach provide other evidence for movement directions within the shear zone. Looking down on the outcrop we see that the regional flat-lying foliation steepens dramatically as it enters the shear zone, giving a sense of movement compatible with the kinematics John worked out from the asymmetric porphyroblasts.