

animals, are neither optimistic nor pessimistic, but entirely tropistic, their movements "forced movements." They don't think. They just react instinctively to each stimulus as they must react. So when an experimenter gets a snail to improve its time for running a simple maze by as much as from two thousand seconds to two hundred, one ventures to believe it would require a host of such tests to half convince the scientist that a snail could either learn or think in any sense of those words.

If you searched in the bush for those giant snails you might be disappointed seeing none about, till you lifted up a mass of palm fronds under a delicate palm tree. There! Dozens of them. If only some god's eye would let us see all that goes on in these sluggish grey-green life forms at home in this half-decayed pile fallen from the slender drooping palm grace above; would tell us why dull eyes, deaf ears, three humble nerve ganglia, odour-sensing tentacles, should choose this particular blend of conditions. We can only see that darkness, coolness, dampness, shelter are essentials. The snails' intimate reactions with each of these, with each other, and with the complex life of decaying matter are unknown.

Some say snails will respond to a particular creaking on glass if the pitch is right. We all know how sensitive snails are to vibrations, also that, though seemingly blind and halt, nearer the inanimate than the live, they are guided by a trusty sense of smell. Nature draws no invidious comparisons between the snail's superb sluggishness and the sparrow's lightning turns. Though it can't walk, run, or fly,



the snail group has colonized practically every environment from the abyss to the tree-tops and ten thousand feet up mountains. Desert drought is the greatest barrier to the land species.

The New Zealand snail's nearest relatives are in New Caledonia and Queensland. And this fact confirms the geologist's map of New Zealand joined to New Caledonia some fifty million years ago when this genus first appeared. So snails are present indicators of ancient geography, just as they are sometimes good barometers. When in New Zealand in a dry summer you see those snails down at a stream side, in damp bush, and in a wet period in drier places, you see their bias towards humid conditions, their incomplete emancipation from their remotely ancient home, the sea, and from the vast majority of their snail relatives—still marine or fresh water.

That giant snail, after all, like others, lives only four or five years. The snail group is hundreds of millions of years old.

Illustrations on pages 7, 8, and 9 are three views of one *pupurangi* shell. The illustration at the top of page 8 is of a typical giant snail.

