

Finally, the shells in the Peuquenes or oldest ridge, prove, as before remarked, that it has been upraised 14,000 feet since a Secondary period, which in Europe we are accustomed to consider as far from ancient; but since these shells lived in a moderately deep sea, it can be shown that the area now occupied by the Cordillera must have subsided several thousand feet—in northern Chile as much as 6,000 feet—so as to have allowed that amount of submarine strata to have been heaped on the bed on which the shells lived. The proof is the same with that by which it was shown that at a much later period since the tertiary shells of Patagonia lived, there must have been there a subsidence of several hundred feet, as well as an ensuing elevation. Daily it is forced home on the mind of the geologist that nothing, not even the wind that blows, is so unstable as the level of the crust of this earth.

I will make only one other geological remark: although the Portillo chain is here higher than the Peuquenes, the waters, draining the intermediate valleys, have burst through it. The same fact, on a grander scale, has been remarked in the eastern and loftiest line of the Bolivian Cordillera, through which the rivers pass: analogous facts have also been observed in other quarters of the world. On the supposition of the subsequent and gradual elevation of the Portillo line, this can be understood; for a chain of islets would at first appear, and, as these were lifted up, the tides would be always wearing deeper and broader channels between them. At the present day, even in the most retired sounds on the coast of Tierra del Fuego, the currents in the transverse breaks which connect the longitudinal channels are very strong, so that in one transverse channel even a small vessel under sail was whirled round and round.

About noon we began the tedious ascent of the Peuquenes ridge, and then for the first time experienced some little difficulty in our respiration. The mules would halt every fifty yards, and after resting for a few seconds the poor willing