

four concentric reefs are only the most distinct of that region; others, less extensively investigated thus far, lie to the northward; indeed, the whole peninsula of Florida consists altogether of coral reefs annexed to one another in the course of time, and containing only fragments of corals and shells, etc., identical with those now living upon that coast. Now, if a width of five miles is a fair average for one coral reef growing under the circumstances under which the concentric reefs of Florida are seen now to follow one another, and this regular succession should extend only as far north as Lake Ogeechobee, for two degrees of latitude, this would give about two hundred thousand years for the period of time which was necessary for that part of the peninsula of Florida which lies south of Lake Ogeechobee to rise to its present southern extent above the level of the sea, and during which no changes have taken place in the character of the animals of the Gulf of Mexico.

It is very prejudicial to the best interests of science to confound questions that are entirely different, merely for the sake of supporting a theory; yet this is constantly done, whenever the question of the fixity of species is alluded to. A few more words upon this point will, therefore, not be out of place here.

I will not enter into a discussion upon the question whether any species is found identically the same in two successive formations, as I have already examined it at full length elsewhere,<sup>1</sup> and it may be settled finally one way or the other, without affecting the proposition now under consideration; for it is plain, that if such identity could be proved, it would only show more satisfactorily how tenacious species are in their character, to continue to live through all the physical changes which have taken place between two successive geological periods. Again, such identity once proved, would leave it still doubtful whether their representatives in two successive epochs are descendants one of the other, as we have already strong evidence in favor of the separate origin of the representatives of the same species in separate geographical areas.<sup>2</sup> The case of closely allied, but different species occurring in successive periods, yet limited respectively in their epochs, affords, in the course of time, a parallel to the case of closely allied, so-called, representative species occupying different areas in space, which no sound naturalist would suppose now to be derived one from the other. There is no more reason to suppose equally allied species following one another in time to be derived one from the other; and all that has been said

consideration, to the charming song of Chamisso, entitled *Trugishe Geschichte*, and beginning as follows:

's war Einer dem's zu Herzen ging.

<sup>1</sup> AGASSIZ, (L.) *Coquilles tertiaires réputées identiques avec les espèces vivantes*, *Nouv. Mém. de la Soc. Helv. des sc. nat.* Neuchâtel, 1845, vol. 7, 4to. fig.—AGASSIZ, (L.) *Études critiques sur les*

*Mollusques fossiles*, Neuchâtel, 1831-45, 4to. fig.—AGASSIZ, (L.) *Monographies d'Echinodermes vivans et fossiles*, Neuchâtel, 1838-42, 4 nos., 4to. fig.—AGASSIZ, (L.) *Recherches sur les Poissons fossiles*, Neuchâtel, 1833-44, 5 vols., 4to., atlas, fol.

<sup>2</sup> See Sect. 10, where the case of representative species is considered.