

that among the mammalia there exists no close relation between the *bulk* of the species and the *quantity* of the vegetation in the countries which they inhabit.

With regard to the number of large quadrupeds, there certainly exists no quarter of the globe which will bear comparison with southern Africa. After the different statements which have been given, the extremely desert character of that region will not be disputed. In the European division of the world, we must look back to the tertiary epochs to find a condition of things among the mammalia resembling that now existing at the Cape of Good Hope. Those tertiary epochs, which we are apt to consider as abounding to an astonishing degree with large animals, because we find the remains of many ages accumulated at certain spots, could hardly boast of more large quadrupeds than southern Africa does at present. If we speculate on the condition of the vegetation during those epochs, we are at least bound so far to consider existing analogies as not to urge as absolutely necessary a luxuriant vegetation, when we see a state of things so totally different at the Cape of Good Hope.

We know¹ that the extreme regions of North America, many degrees beyond the limit where the ground at the depth of a few feet remains perpetually congealed, are covered by forests of large and tall trees. In a like manner, in Siberia, we have woods of birch, fir, aspen, and larch, growing in a latitude² (64°) where the mean temperature of the air falls below the freezing point, and where the earth is so completely frozen that the carcass of an animal imbedded in it is perfectly preserved. With these facts we must grant, as far as *quantity alone* of vegetation is concerned, that the

¹ See Zoölogical Remarks to Capt. Back's Expedition, by Dr. Richardson. He says, "The subsoil north of latitude 56° is perpetually frozen, the thaw on the coast not penetrating above three feet, and at Bear Lake, in latitude 64°, not more than twenty inches. The frozen substratum does not of itself destroy vegetation, for forests flourish on the surface, at a distance from the coast."

² See Humboldt, *Fragmens Asiaticques*, p. 386: Barton's *Geography of Plants*: and Malte Brun. In the latter work it is said that the limit of the growth of trees in Siberia may be drawn under the parallel of 70°.