

migrations on the waters of the Rio Negro. When the Orinoco begins to swell* after the vernal equinox, an innumerable quantity of ducks (*patos careteros*) remove from the eighth to the third degree of north latitude, to the first and fourth degree of south latitude, towards the south-south-east. These animals then abandon the valley of the Orinoco, no doubt because the increasing depth of waters, and the inundations of the shores, prevent them from catching fish, insects, and aquatic worms. They are killed by thousands in their passage across the Rio Negro. When they go towards the equator they are very fat and savoury; but in the month of September, when the Orinoco decreases and returns into its bed, the ducks, warned either by the voices of the most experienced birds of passage, or by that internal feeling which, not knowing how to define, we call instinct, return from the Amazon and the Rio Branco towards the north. At this period they are too lean to tempt the appetite of the Indians of the Rio Negro, and escape pursuit more easily from being accompanied by a species of herons (*gavanes*) which are excellent eating. Thus the Indians eat ducks in March, and herons in September. We could not learn what becomes of the *gavanes* during the swellings of the Orinoco, and why they do not accompany the *patos careteros* in their migration from the Orinoco to the Rio Branco. These regular migrations of birds from one part of the tropics towards another, in a zone which is during the whole year of the same temperature, are very extraordinary phenomena. The southern coasts of the West India Islands receive also every year, at the period of the inundations of the great rivers of Terra Firma, numerous flights of the fishing-birds of the Orinoco, and of its tributary streams. We must presume that the variations of drought and humidity in the equinoctial zone have the same influence as the great changes of temperature in our climates, on the habits of animals. The heat of summer, and the pursuit of insects, call the humming-birds into the northern parts of the United States, and into Canada as far as the parallels of Paris and Berlin: in

* The swellings of the Nile take place much later than those of the Orinoco; after the summer solstice, below Syene; and at Cairo in the beginning of July. The Nile begins to sink near that city generally about the 15th of October, and continues sinking till the 20th of May.