Geographical Distribution and Migrations of Insects.

Before I conclude this sketch of the manner in which the habitable parts of the earth are shared out among particular assemblages of organic beings, I must offer a few remarks on insects, which, by their numbers and the variety of their powers and instincts, exert a prodigious influence in the economy of animate nature. As a large portion of these minute creatures are strictly dependent for their subsistence on certain species of vegetables, the entomological provinces must coincide in a considerable degree with the botanical.

All the insects, says Latreille, brought from the eastern parts of Asia and China, whatever be their latitude and temperature, are distinct from those of Europe and of Africa. The insects of the United States, although often approaching very close to our own, are, with very few exceptions, specifically distinguishable by some characters. In South America, the equinoctial lands of New Granada and Peru on the one side, and of Guiana on the other, contain for the most part distinct groups; the Andes forming the division, and interposing a narrow line of severe cold between climates otherwise very similar.*

Migratory instincts. — Nearly all the insects of the United States and Canada, differ specifically from the European; while those of Greenland appear to be in a great measure identical with our own. Some insects are very local; while a few, on the contrary, are common to remote countries, between which the torrid zone and the ocean intervene. Thus our painted lady butterfly (*Vanessa cardui*) re-appears at the Cape of Good Hope and in New Holland and Japan with scarcely a varying streak.† The same species is said to be one of the few insects which are universally dispersed over the earth, being found in Europe, Asia, Africa, and America; and its wide range is the more interesting, because it seems explained by its migratory instinct, seconded, no doubt, by a capacity, enjoyed by few species, of enduring a great diversity of temperature.

A vast swarm of this species, forming a column from ten to fifteen feet broad, was, a few years since, observed in the Canton de Vaud; they traversed the country with great rapidity from north to south, all flying onwards in regular order, close together, and not turning from their course on the approach of other objects. Professor Bonelli, of Turin, observed, in March of the same year, a similar swarm of the same species, also directing their flight from north to south, in Piedmont, in such immense numbers that at night the flowers were literally covered with them. They had been traced from Coni, Raconi, Susa, &c. A similar flight at the end of the last century is recorded by M. Louch, in the Memoirs of the Academy of Turin. The fact is the more worthy of notice, because the caterpillars of this butterfly are not gregarious, but solitary from

* Géographie Générale des Insectes et des Arachnides. Mém. du Mus. d'Hist. Nat., tom. iii.

† Kirby and Spence, vol. iv. p. 487.; and other authors.