

nevertheless, of the former species more than a dozen birds were kept, as I am informed by Mr. Crawford, in a park at Penang, under a perfectly well-adapted climate, but never once bred. The *Columba migratoria* in its native country, North America, invariably lays two eggs, but in Lord Derby's menagerie never more than one. The same fact has been observed with the *C. leucocephala*.⁴⁷

Gallinaceous birds of many genera likewise show an eminent capacity for breeding under captivity. This is particularly the case with pheasants, yet our English species seldom lays more than ten eggs in confinement; whilst from eighteen to twenty is the usual number in the wild state.⁴⁸ With the Gallinacæ, as with all other orders, there are marked and inexplicable exceptions in regard to the fertility of certain species and genera under confinement. Although many trials have been made with the common partridge, it has rarely bred, even when reared in large aviaries; and the hen will never hatch her own eggs.⁴⁹ The American tribe of Guans or Cracidæ are tamed with remarkable ease, but are very shy breeders in this country;⁵⁰ but with care various species were formerly made to breed rather freely in Holland.⁵¹ Birds of this tribe are often kept in a perfectly tamed condition in their native country by the Indians, but they never breed.⁵² It might have been expected that grouse from their habits of life would not have bred in captivity, more especially as they are said soon to languish and die.⁵³ But many cases are recorded of their breeding: the capercaillie (*Tetrao urogallus*) has bred in the Zoological Gardens; it breeds without much difficulty when confined in Norway, and in Russia five successive generations have been reared: *Tetrao tetrix* has likewise bred in Norway; *T. scoticus* in Ireland; *T. umbellus* at Lord Derby's; and *T. cupido* in North America.

It is scarcely possible to imagine a greater change in habits than that which the members of the ostrich family must suffer, when cooped up in small enclosures under a temperate climate, after freely roaming over desert and tropical plains or entangled forests;

⁴⁷ Audubon, 'American Ornithology,' vol. v. pp. 552, 557.

⁴⁸ Moubray on Poultry, 7th edit., p. 133.

⁴⁹ Temminck, 'Hist. Nat. Gén. des Pigeons,' &c., 1813, tom. iii. pp. 288, 382; 'Annals and Mag. of Nat. Hist.,' vol. xii., 1843, p. 453. Other species of partridge have occasionally bred; as the red-legged (*P. rubra*), when kept in a large court in France (see 'Journal de Physique,' tom. xxv. p. 294), and in the Zoological Gardens in 1856.

⁵⁰ Rev. E. S. Dixon, 'The Dovecote,' 1851, pp. 243-252.

⁵¹ Temminck, 'Hist. Nat. Gén. des Pigeons,' &c., tom. ii. pp. 456, 458; tom. iii. pp. 2, 13, 47.

⁵² Bates, 'The Naturalist on the Amazons,' vol. i. p. 193; vol. ii. p. 112.

⁵³ Temminck, 'Hist. Nat. Gén.,' &c., tom. ii. p. 125. For *Tetrao urogallus*, see L. Lloyd, 'Field Sports of North of Europe,' vol. i. pp. 287, 314; and 'Bull. de la Soc. d'Acclimat.,' tom. vii., 1860, p. 600. For *T. scoticus*, Thompson, 'Nat. Hist. of Ireland,' vol. ii. 1850, p. 49. For *T. cupido*. 'Boston Journal of Nat. Hist.,' vol. iii. p. 199.