while not overlooking this local variation, will regard the Swallow of all these tracts as forming a single species, the *Hirundo rustica* of Linnæus.@@1 Returning, usually already paired, to its summer-haunts, after its winter-sojourn in southern lands, and generally reaching England about the first week in April, it at once repairs to its old quarters, nearly always around the abodes of men ; and, about a month later, the site of the nest is chosen, resort being had in most cases to the very spot that has formerly served the same purpose—the old structure, if still remaining, being restored and refurnished. So trustful is the bird that it commonly establishes itself in any of men’s works that will supply the necessary accommodation, and a shed, a barn, or any building with an open roof, a chimney@@2 that affords a support for the nest, or even the room of an inhabited house—if chance should give free access thereto, —to say nothing of extraordinary positions, may be the place of its choice. Wheresoever placed, the nest is formed of small lumps of moist earth, which, carried to the spot in the bird’s bill, are duly arranged and modelled, with the aid of short straws or slender sticks, into the required shape. This is generally that of a half-saucer, but it varies according to the exigencies of the site. The materials dry quickly into a hard crust, which is lined with soft feathers, and therein are laid from four to six white eggs, blotched and speckled with grey and orange-brown deepening into black. Two broods are usually reared in the season, and the young on leaving the nest soon make their way to some leafless bough, whence they try their powers of flight, at first accompanying their parents in short excursions on the wing, receiving from them the food themselves are as yet unable to capture, until able to shift for themselves. They collect in flocks, often of many hundreds, and finally leave the country about the end of August or early in September, to be followed, after a few weeks, by their progenitors. The Swallows of Europe doubtless pass into Africa far beyond the equator,@@3 and those of Northern Asia, though many stop in India or Burmah, even further to the southward, occasionally reaching Australia, while those of North America extend their winter-wanderings to southern Brazil ; but, whithersoever they then resort, they during that season moult their feathers, and this fact affords one of the strongest arguments against the popular belief (which, curious to say, is still partly if not fully entertained by many who should know better) of their becoming torpid in winter, for a state of torpidity would suspend all animal action.@@4 The chestnut forehead and throat, the shining steel-blue upper plumage, and the dusky- white—in some cases reddening so as almost to vie with the frontal and gular patches—of the lower parts are well known to every person of observation, as is the markedly forked tail, which is become proverbial of this bird.

Taking the word Swallow in a more extended sense, it is used for all the members of the Family *Himndinidæ,@@*5 excepting a few to which the name Martin (vol. xv. p. 581) has been applied, and this Family includes from 80 to 100 species, which have been placed in many different genera. The true Swallow has very many affines, some of which range almost as widely as itself docs, while others seem to have curiously restricted limits, and much the same may be said of several of its more distant relatives. But altogether the Family forms one of the most circumscribed and therefore one of the most natural groups of *Oscines,* having no near allies; for, though in outward appearance and in some habits the Swallows bear a considerable resemblance to Swifts *(q. v.* ), the latter belong to a very different Order, and are not Passerine birds at all, as their structure, both internal and external, proves. It has been sometimes stated that the *Hirundinidæ* have their nearest relations in the Flycatchers (vol. ix. p. 351) ; but the assertion is very questionable, and the supposition that they are allied to the *Ampelidæ* (*cf*. Waxwing), though possibly better founded, has not as yet been confirmed by any anatomical investi­gation. An affinity to the Indian and Australian *Artamus* (the species of which genus are often known as Wood-Swallows, or Swallow-Shrikes) has also been suggested; and it may turn out that this genus, with its neighbours, may be the direct and less modified descendants of a generalized type, whence the *Hirundinidæ* have diverged ; but at present it would seem as if the suggestion originated only in the similarity of certain habits, such as swift flight and the capacity of uninterruptedly taking and swallowing insect-food on the wing.

Swallows are nearly cosmopolitan birds, inhabiting every considerable country except New Zealand, wherein only a stray example, presumably from Australia, occasion­ally occurs. (a. n.)

SWAMMERDAM, John (1637-1680), may be ranked almost with Leeuwenhoek as one of the most eminent Dutch naturalists of the 17th century. Born at Amster­dam in 1637, the son of an apothecary and naturalist, he was destined for the church ; but he insisted on passing over to the profession of medicine, meanwhile passion­ately devoting himself to the study of insects. Having necessarily to interest himself in human anatomy, he devoted much attention to the preservation and better demonstration of the various structures, and he devised the method of studying the circulatory system by means of injections, so doing the greatest service to practical anatomy. The fame of his collection soon became Euro­pean ; thus the grand-duke of Tuscany offered him 12,000 florins for his collection, on condition of his coming to Florence to continue it. His *General History of Insects* and other kindred works lie at the foundation of modern entomology, and include many important discoveries. Thus he cleared up the subject of the metamorphosis of insects, and in this and other ways laid the beginnings of their natural classification, while his researches on the anatomy of mayflies and bees were also of fundamental importance. His devotion to science led to his neglect of practice ; his father greatly resented this, and stopped all supplies ; and thus Swammerdam experienced a period of considerable privation, which had the most unfortunate consequences to his health, both bodily and mental. In 1675 he published his *History of the Ephemera,* and in the same year his father died, leaving him an adequate fortune, but the mischief was irreparable. He became a hypochondriac and mystic, joined the followers of Antoinette Bourignon, and died at Amsterdam in 1680.

SWAN (A.-S. *Swan* and *Swon,* Icel. *Svanr,* Dutch *Zwaan,* Germ. *Schwan),* a large swimming-bird, well known from being kept in a half-domesticated condition through­out many parts of Europe, whence it has been carried to

@@@1 Dr Stejneger (one of the chief leaders in the recent American movement, the results though not the intention of which would be the subversion of much of the nomenclature of birds hitherto thought in Europe to have been established on tolerably firm principles) would apply to the Swallow the generic term of *Chelidon,* generally accepted for the Martin (vol. xv. p. 581), and to the latter *Ηirundo.* Herein he is technically incorrect, for one of the first principles of zoological nomenclature has always been that a generic term, to be valid, must be defined. In the absence of definition such a term may be, by courtesy, occasionally accepted ; but this courtesy has never been, nor except in America is likely to be, extended to the misapplication here in question.

@@@2 Hence the common English name of “Chimney-Swallow.” In North America it is usually the “Barn-Swallow.”

@@@3 It must be noted that the Swallow has been observed in England in every month of the year; but its presence from the beginning of December to the middle of March is an extremely rare occurrence.

@@@4 See John Hunter’s *Essays and Observations in Natural History,* edited by Sir R. Owen in 1861 (ii. p. 280). An excellent biblio­graphy of the Swallow-torpidity controversy, up to 1878, is given by Prof. Coues *(Birds of the Colorado Valley,* pp. 378-390), who seems still to hanker after the ancient faith in “hibernation.”

@@@5 An enormous amount of labour has been bestowed upon the *Hirundinidæ* by Mr Sharpe *(Cat. B. Br. Museum,* x. pp. 85-210), only commensurate, perhaps, with that required for an understanding of the results at which he has arrived. Nothing can better shew the difficulty of unravelling the many puzzles which the Family offers than this ; and it is to be hoped that in his finely-illustrated *Monograph* which is now in course of publication he will succeed in clearing up some of them.