

so on, till we arrive at marvellous structures, rivalling the weavers' art.

Even in so singular a nest as that of the *Hirundo* (*Collocalia esculenta*), eaten by the Chinese, we can, I think, trace the stages by which the necessary instinct has been acquired. The nest is composed of a brittle white translucent substance, very like pure gum arabic, or even glass, lined with adherent feather-down. The nest of an allied species in the British Museum consists of irregularly reticulated fibres, some as fine as * of the same substance; in another species bits of sea-weed are agglutinated together with a similar substance. This dry mucilaginous matter soon absorbs water and softens: examined under the microscope it exhibits no structure, except traces of lamination, and very generally pear-shaped bubbles of various sizes; these, indeed, are very conspicuous in small dry fragments, and some bits looked almost like vesicular lava. A small pure piece put into flame crackles, swells, does not readily burn, and smells strongly of animal matter. The genus *Collocalia*, according to Mr. G. R. Gray, to whom I am much obliged for allowing me to examine all the specimens in the British Museum, ranks in the same sub-family with our common Swift. The latter bird generally seizes on the nest of a sparrow, but Mr. Macgillivray has carefully described two nests in which the confusedly fitted materials were agglutinated together by extremely thin shreds of a substance which crackles but does not readily burn when put into a flame. In N. America† another species of Swift causes its nest to adhere against the vertical wall of a chimney, and builds it of small sticks placed parallel and agglutinated together

* [In the MS a blank is here intentionally left for the subsequent filling in of an appropriate word.—G. J. R.]

† For *Cypselus murarius* see Macgillivray, *British Birds*, vol. iii, 1840, p. 625. For *C. pelagius*, see Mr. Peabody's excellent paper on the Birds of Massachusetts in the *Boston Journal of Nat. Hist.*, vol. iii, p. 187. M. E. Robert (*Comptes Rendus*, quoted in *Ann. and Mag. of Nat. Hist.*, vol. viii, 1842, p. 476) found that the nests of the *Hirundo riparia*, made in the gravelly banks of the Volga, had their upper surfaces plastered with a yellow animal substance, which he imagined to be fishes' spawn. Could he have mistaken the species, for there is no reason to suppose our bank-martin has any such habit? This would be a very remarkable variation of instinct, if it could be proved; and the more remarkable that this bird belongs to a different sub-family from the Swifts and *Collocalia*. Yet I am inclined to believe it, for it has been affirmed with apparent truth that the House-martin moistens the mud, with which it builds its nest, with adhesive saliva.