

detached. The fish, *Seriola*, was kept alive until the larger buds of the grape-like gonosomes separated from the hydroids. These buds are medusæ, different from any which I have ever seen, but with close affinities to common and well-known genera. A large glass aquarium containing several gallons of water was found to be swarming with these medusæ two days after the capture of the *Seriola*.

Each fully-grown medusa closely resembles the genus *Sarsia*. It has an oval bell, four broad unbranched radial tubes, and four long simple tentacles. There are no octocysts on the margin of the bell.

If the strange form of the hydroid was not known to me, it would have been very easy to call this medusa a near relative of *Sarsia*. The medusa belongs to a group, called by Agassiz the Tubularians, but its hydroid is different from that of any other member of the group.

One other parasitic hydroid may be thought to be related to *Hydrichthys*. I refer to the *Polypodium*, described from the ova of the sturgeon. A description of *Hydrichthys* with figures of the fish (*Seriola*) to which it is attached, and of the hydroid with its medusa, will soon be published by me. As a discussion of its relation to other hydroids has little interest except to a specialist in the study of medusæ, a comparison of *Hydrichthys* with *Polypodium* and other genera is reserved until my complete diagnosis of the genus and species. J. WALTER FEWKES.

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Music in Nature.

IN NATURE for August 11 (p. 343) there is an interesting article on music in Nature; the writer evidently being inclined to deny that true musical notes, and especially several notes in succession having a musical relation to one another, can be found in bird songs. However this may be in the Old World, we have in the New at least one example of a bird which not only sings, or rather whistles, pure and well-sustained musical notes, but has a succession of notes with such intervals as to form a simple melody. I refer to the scarlet tanager.

While we were at The Thousand Islands early in the summer of 1886, one of these brilliant fellows carried on a courtship among the trees close to our cottage, repeating incessantly during the first two days that we heard him the following strain,



in a clear, bright whistle. After the first two days he changed his song thus:—



and during the three weeks that we heard him he made no other variation, except that he occasionally repeated the last two notes a third time, thus filling out the bar. The notes were taken down by a trained musician, and if whistled give the tanager's song exactly.

It may be mentioned that, though perhaps the most brilliant in plumage of our Canadian birds, the male tanager referred to made no attempt at concealment, but swept like a living flame from tree to tree close to the cottage, and when singing preferred to sit on the topmost bough of a pine near by.

A. P. COLEMAN.

Faraday Hall, Victoria University, Coburg,
Ontario, October 8.

Swifts.

THE following facts relating to the habits of the swifts were observed by paying close attention to these remarkable birds during the past summer. For more than a month, *i.e.* from June 1 to July 12, we watched them here. On the fine evenings about forty of them (the males I believe), ascended high into the air at about 9 o'clock, and after wheeling about for a minute or two, screaming loudly, fled straight away, sometimes in one direction, sometimes in another. White, in the "Natural History of Selborne," notices that: "Just before they retire whole groups of them assemble high in the air, and squeak and shoot about with wonderful rapidity." But the most wonderful

part of the proceeding is that they do not come down again that night. At all events I can show that they do not come down again before 10.30, at which time I do not think they would be able to find their nests under the eaves of the church. Between the dates above-mentioned there were only six days during which I did not see or hear the swifts ascend and fly off. Three of these days were rainy, and the swifts stayed at home, and on three other days I was not able to watch them. The churchyard adjoins the garden of this house, and numbers of swifts build in the church, which is but a few feet from where we sit out and walk about in the summer evenings.

After seeing the high-flying swifts safely off to the south-west at 9.10 one night, I sat on a tombstone under the north eaves where most of them build, until 10.30. Two swifts hawking low for flies entered their nests after 9.10, but one of them was flying low while the high-flyers were in sight, and the other came out of its nest after they had gone, and both had retired before 9.20. On the other side of the church my father (the vicar) and my brother, who both took a keen interest in the doings of the swifts, were keeping watch alternately, and only two low-flyers were out there after the others had gone. The high-flyers did not return. On several other nights we watched until 11 o'clock, though not quite continuously, but quite closely enough to make certain that none returned. I think it most probable that owing to the darkness they do not return until the break of day, and further, that they *remain on the wing all night*. This last feat, though sufficiently startling, will, I am convinced, not be deemed impossible by those who have had good opportunities (and made use of them) for studying the ways of swifts and their wonderful powers of flight. As far as my observation goes, the swift settles nowhere except at its own nesting-place.

I shall be very glad of any information tending to throw light upon the question, and I shall be very pleased to give any of your correspondents any further information within my knowledge concerning this curious habit of the swifts, and the proofs thereof, to set out which in this letter would take up too much of your valuable space.

White also says (p. 180, original edition) he has never seen the swift carrying materials to its nest, and suggests that it usurps that of the sparrow. This does not accord with my own observation here. I have repeatedly seen swifts taking bents of grass in their beaks to their nests, and I have again and again scattered feathers on the wind from the sound-holes in the steeple, and from the steps of the cross in the churchyard, and seen them eagerly seized within a few feet of my head by numerous swifts. Their nests are neat, small, and shallow, and very firm, the materials being glued together by the viscous saliva of the builders.

AUBREY EDWARDS.

The Vicarage, Orleton R.S.O., Herefordshire,
October 13.

Hughes's Induction Balance.

HAVING just made a Hughes's induction balance, I have, in the course of some experiments with it, observed what was new to me, for I have not seen it mentioned in any account of the balance. I take the liberty, therefore, of asking through your columns whether the explanation resolves itself into the difference between paramagnetic and diamagnetic substances. The apertures of my bobbins are $1\frac{1}{2}$ inch in diameter; my primary current is from three Daniell's, and the break is a bent steel spring whose free point just grazes the surface of a mercury cup, so that the merest touch with a finger causes a series of regular breaks. Now, if I place an iron or steel disk, or ring, such as a key-ring, inside the aperture, the telephone sounds loudly if the plane of the disk or ring is at *right angles* to the plane of the coils; but very very faintly if it is *parallel* to the plane of the coils. On the other hand, if a disk, or ring, or coil of wire, of any of the diamagnetic metals—copper, brass, zinc, silver, gold, aluminium, lead—be used, the telephone sounds loudly if the plane of the disk or ring be *parallel* to the plane of the coils; but very faintly, if at all, when it is perpendicular to the plane of the coils. Further, if a short *bar* of soft iron, or of nickel, be inserted so that the length of the bar is parallel to the plane of the coils, almost no sound is heard; but if it be turned through a right angle so as to be perpendicular to the plane of the coils, the sound is a maximum. Have we in this simple instrument the ready means of distinguishing paramagnetic from diamagnetic substances?

J. COOK.

Central College, Bangalore, S. India, September 26.