

but we also find, as a peculiar phænomenon, the migration of marine Fishes up the streams, in order to spawn, and, more rarely, that of river Fishes into the sea for the same purpose (the Eel; see Spallanzani's observations in Commachio, G. von Martens' *Italien*, ii. p. 334). Here therefore they are even the same individuals which alternately inhabit the two media; and perhaps this is not all, for it is said of several lakes that fishes which have immigrated into them from the sea are unable to find their way back, in consequence of the deficiency of current, and that they remain, as well as their posterity, in the fresh water; and on the other hand, Nilsson in his *Scandinavian Fauna*, in referring to our Shad (*Alosa*), does not say a word about its ascending into the fresh water, but, on the contrary, states that, according to the observations of Malm, it spawns between the rocky shelves of Gothenburg (Götheborg's skärgård).

Marine Mammalia also sometimes ascend the rivers, but with less regularity, and principally following the migratory Fishes, as was observed by Simpson* to be the case with Seals in the Oregon river as far as the rapids of Les Petites Dalles. Whether the common Seal which, according to E. Boll†, was killed in the Elbe near Dessau, is to be referred to this category, or whether it was one that had escaped from human custody, remains doubtful as a single case at such a distance from the sea.

The great richness of the sea is explained not only by its greater extent, but also by its more uniform temperature. The fresh waters stand in the same relation to it, as a continental to an insular climate; their alternation of temperature is the principal hindrance to their becoming populous, and this attains its maximum by freezing in the colder zones; with the increase of temperature the populousness of the fresh waters increases, but is still limited in the subtropical zone by partial desiccation. In the tropical zone, the conditions of temperature of the fresh waters approach most nearly to those of the sea, and with them their populousness.

BIBLIOGRAPHICAL NOTICES.

The Natural History of the Tineina. By H. T. Stainton, assisted by Prof. Zeller and J. W. Douglas. Vol. II. 8vo. London: Van Voorst, 1857.

AFTER an interval of nearly two years, we have to call the attention of our readers to the appearance of a second volume of this highly

* Narrative of a Journey round the World, 1841-42.

† Archiv des Vereins für Naturkunde in Mecklenburg, 10 Heft, 1856, p. 73.

interesting entomological work, of the first volume of which we gave a notice in our Number for March 1856. As the present volume agrees exactly in all essential particulars of plan and arrangement—in its curious polyglot nature, the arrangement of its four languages in parallel columns, and the division of the subjects into sections—with its predecessor, there is no necessity for our referring to these peculiarities in detail;—in their excellences, as in their defects, the two volumes are identical.

In accordance with the general plan of the work, the present volume again contains the natural history of twenty-four species of *Tineina*, with full descriptions of the insects in all their stages, and a detailed account of their synonymy, illustrated by numerous figures upon eight beautiful plates. The latter are perhaps hardly so spirited in execution as those from the pencil of the late William Wing, which were published in the first volume; but in other respects they are highly satisfactory, and reflect the highest credit upon the artist and engraver, Mr. G. W. Robinson.

The twenty-four Moths which Mr. Stainton has selected for investigation on the present occasion all belong to the genus *Lithocolletis*, the species of which were for the most part arranged under the genus *Argyromiges* by Curtis and Stephens and the older British entomologists. The genus is a very extensive one, including, according to Mr. Stainton's summary in the commencement of this volume, no less than seventy-six known species. They are all of minute size, some of them amongst the smallest of Lepidopterous insects, but at the same time many of the species exhibit a most brilliant appearance from the presence of metallic silvery or golden markings upon the anterior wings. Their larvæ, like those of *Nepticula* and *Cemiostoma* described in the first volume, are leaf-miners; but they would seem to disfigure the leaves in which they take up their abode far more than those of the genera just mentioned, for their mines usually form broad blotches, and Mr. Stainton tells us that, "owing to the exertions of the larva, or to the natural shrinkage of the silken carpet which it spreads over the cuticle, this latter gets drawn into several folds, causing the opposite side of the leaf to assume a curved form, and by the pucker in the leaf thus produced, the larvæ obtain a convenient and capacious habitation." When full-grown the larvæ undergo their change to the pupa state in the interior of their mines, rarely spinning a firm cocoon, although some of them, "apparently aware of the weakness of the defences provided by their own silk, carefully cover the cocoon over with the grains of excrement, so that hardly any of the silk is left exposed." The species are for the most part confined to particular plants, a few only being less nice about their diet; but trees, shrubs and herbaceous plants are alike liable to their attacks, although the majority seem to prefer plants of a woody nature.

In his general observations on the genus, Mr. Stainton, as before, gives a summary of all the species belonging to it, but this does not contain short characters, such as were given in the first volume; and he also carries out his ideas of an Entomological Botany, by furnishing

his readers with a systematic analysis of the plants on which the different larvæ feed, the name of each plant being accompanied by a list of the species which have been found on it.

The Entomologist's Annual for 1858. London. John Van Voorst. 12mo.

The Entomologist's Annual is another book for which the British entomologist is indebted to the energetic exertions of Mr. Stainton. It is now in the fourth year of its existence, and seems to us to have acquired more vigour since the appearance of the first of the series; that is to say, the editor appears to have given up somewhat of his original notion, that in order to obtain success, an Entomological Annual must contain a certain amount of light matter, which, unfortunately, has too general a tendency to degenerate into trash.

In the 'Annual' for 1858 we meet with scarcely an indication of this, the greater part of its contents being of a nature to be really interesting to the student of British Entomology.

Besides the usual lists of new British species of Coleoptera, Lepidoptera and Aculeate Hymenoptera, discovered in the course of the year just elapsed, contributed by Mr. Janson, the Editor, and Mr. F. Smith, we have a series of notes on British Geodephagous Beetles by the Rev. J. F. Dawson, and on the caterpillars of the Saw-flies by Mr. Westwood (the latter intended especially for the use of young collectors of Lepidoptera, to save them the trouble and mortification of rearing a number of supposed caterpillars and getting nothing but Saw-flies for their pains),—questions and enigmas upon points connected with the natural history of the Tineina, and other Lepidopterological questions,—and a most warlike paper, entitled "Notes on Ants'-Nest Beetles," by Mr. Janson (in continuation of an interesting memoir on the same subject in the 'Annual' for last year), in which some offending Coleopterists are attacked in a style worthy of the rival Eatanswill editors immortalized in the 'Pickwick Papers.'

But perhaps the most important paper in the volume is the "Synopsis of the British Planipennes," by Dr. Hagen, which contains short characters of all the known British genera and species of the true Neuroptera with a perfect metamorphosis, and also of a few European forms, which Dr. Hagen considers will probably be found in this country. The most important of these are the Ant-lions (*Myrmeleon*), one of which, it appears, was described by Barbut as a British insect; and the author thinks it by no means impossible "that Southern Ireland may possess the extraordinary *Nemoptera Lusitanica*." The last year's 'Annual' contained a "Synopsis of the British Dragon-flies," also from the pen of Dr. Hagen; and there can be no doubt that the publication of such papers as these must add greatly both to the usefulness and prosperity of this little book.



1858. "The natural history of the Tineina. By H. T. Stainton, assisted by Prof. Zeller and J. W. Douglas. Vol. II. 8vo. London: Van Voorst, 1857." *The Annals and magazine of natural history; zoology, botany, and geology* 1, 63–65.

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