THE ANNALS
AND
MAGAZINE OF NATURAL HISTORY.

[THIRD SERIES.]

No. 41. MAY 1861.

XXXVIII.—On the British species of Mugil, or Grey Mullets.
By Dr. Albert Günther.

The species of Mugil are very numerous, and very similar to one another in general appearance, the genus resembling in this respect some of the Cyprinoids, as Leuciscus, Abramis, and others. They can be distinguished from one another only by close examination; the greater part of the difficulty of distinguishing them, however, is owing rather to the incompleteness of the descriptions in our ichthyological works, than to the absence of palpable characters. The latter (such as are hereafter indicated) are very constant in each species, but so little conspicuous, that we find very lengthened descriptions, giving minute details of the general appearance of a fish, but omitting the very character by which it differs from other species. The discovery of these characters is due to Cuvier and Bouparte, who have carefully used them for the distinction of the Mediterranean species; and it is much to be regretted that, in the great ichthyological work of the former, equal attention has not been paid to the distinction and description of many foreign species, which, if the typical specimens are not re-examined and redescribed, are dead letters in science.

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Mr. R. H. Meade on the British Species of Phalangiidae. 353

XXXIX.—Supplement to a Monograph on the British Species of Phalangiidae, or Harvest-men. By R. H. MEADE, F.R.S.

In June 1855, I published, in the 'Annals and Magazine of Natural History' (vol. xvi. p. 393), a short paper on the Phalangiidae of this country, in which I described fifteen species. Since that period a few new facts have come to my knowledge, which will enable me to add somewhat to the natural history of this neglected tribe; and I have also one new species to record, the only one that has fallen under my notice since the appearance of my monograph.

I formerly remarked that no observations had been published as to whether the Harvest-men change their skins and undergo periodical moltings, like the true spiders; but soon after the appearance of my paper, my friend Mr. Blackwall wrote to me to the following effect:—“Many years ago, when engaged in investigating the changes of integument which various species of spiders undergo, I directed my attention to the Phalangiidae also; and I can inform you, from my own observations, that they cast their integument several times before they arrive at maturity.” In further confirmation of this fact, the Rev. Prof. Henslow, in a communication dated September 4, 1855, wrote to me, “I have just found two Harvest-men standing by what are manifestly their old clothes.” These he kindly transmitted to me, together with the spiders themselves, which proved to be specimens of Phalangium urinigerum. Mr. Blackwall also sent me several exuviae in proof of his observations; so no doubt can rest any longer upon this point.

With respect to the power possessed by the Phalangiidae of reproducing lost limbs, Mr. Blackwall observes in the same letter, “I am inclined to think that they do possess the power, as I have frequently noticed one of the long legs of the second pair (though perfect in structure) to be much shorter and smaller than the other. Latreille’s argument against the capability of animals of the order Phalangiidea reproducing lost limbs, deduced from the supposed shortness of their lives, is of little or no weight, when it is borne in mind that the existence of numerous species of spiders which do reproduce lost limbs is limited to a few months.”

I am here led to the correction of another error into which I had fallen, viz., with respect to the length of life to which the Phalangiidae may attain; for while doubtless the individuals of most species die at the commencement of cold weather, some survive through the whole winter. Mr. Blackwall has found living specimens of Nemastoma binaculatum, Megabunus insignis, Megabunus corniger, and Opilio agrestis, under stones in the

be fishes of luxury, like Gold-fish, in the Malayan Peninsula, are, according to the Siamese. They keep them like parrots, one of which has great fighting qualities, and is infatuated with the combats of these cock-fights, and stake considerable sums on their families. The license of affords a considerable annual revenue p. 87.
woods, both in winter and early spring; and on several occasions
I have found adult specimens of *Megabrunus insignis* myself in
March and April, and *Nemastoma binaculatum* all through the
winter in a torpid state.

In returning my thanks to those friends who had assisted me
in preparing materials for my monograph, I omitted the name
of the Rev. Hamlet Clark; and I now embrace the opportunity
of supplying the omission. I am the more anxious to do this,
as I found, after the publication of my memoir, that he had been
so kind as to put up a large collection of specimens of British
Harvest-men (the result of two years' collecting), together with
a number of MS. notes upon them, and to transmit the whole
to me through the post-office, by which they must have been
lost, as they never reached me. Mr. Clark had promised to
send them some time before I finished my paper; and as they
did not arrive, I thought he had forgotten or neglected to do so;
and I was exceedingly annoyed to hear, a short time after the
appearance of my monograph, that they had been sent off and
lost. From the well-known talents of the Rev. Hamlet Clark
as an entomologist, it is probable that, had I received the parcel,
this department of Arachnology would have been enriched by
some additional species, as well as by a more extended knowledge
of the habits of the family.

**Genus Phalangium, Linn.**

*Phalangium cornutum.*

In the male of this species the length of the horned processes
of the fauces is subject to great variation. I mentioned before,
that they are always short in young specimens; but I have
since found that adult individuals are often met with in which
the horns are very short, and sometimes almost deficient. The
size of these Harvest-men is generally small; and the palpi seem
to bear a proportionate length to that of the horns of the fauces.
In the month of August 1859, I found numerous adult short-
horned males together with females of this species, near Bicester,
in Oxfordshire, in a dry stony place, which were smaller than
usual in all their proportions, and very ferruginous in colour.
At first I regarded them as a new species; but on finding that
they agreed with ordinary specimens in all points of structure,
extcept in the length of the fauces and palpi of the males, I came
to the conclusion that they were only stunted varieties, perhaps
produced in some measure by the extraordinary dryness of the
season. I have since received similar specimens from the Rev.
Phalangiidae

Mr. R. H. Meade on the British Species of Phalangiidae. 355

Phalangiium minutum.

When I published my monograph, the habitat of this minute species was unknown to me; I had then seen but two specimens. I have since found another, in a collection of Phalangiidae made in the neighbourhood of Dublin.

Genus Opilio, Herbst.

Opilio histrix.

I am glad now to be able to give this fine Harvest-man (our largest native species) a clear title to a place among the British Phalangiidae.

In November 1856, the Rev. A. M. Norman transmitted to me, alive, a fine adult female specimen, which he found under a mat, "which lay before a window opening down to the ground into the garden," at Kibworth, near Market-Harborough, Leicestershire. In November of the following year I had also the pleasure of receiving a pair (male and female) of the same spiders from Mr. Norman, which were captured at Kibworth. In determining the name of these specimens from my description, it struck this naturalist that a slight alteration in the account would make it more correct: viz. that the row of minute teeth with which the posterior edge of each ring of the abdomen is said to be furnished should have been called a row of small tubercles.

Genus Leiobunus, Koch.

Leiobunus Blackwallii, n. sp.

L. forma et colore Leiobunus rotundus consimilis; sed differt cephalothoracis fronte pallida, cornis albo cinetia, macula abdominali ad extremum extensa, articulorum erum juncturis albidis, tarisque albis et fusco annulatis. Long. fem. 2, maris 1 ½ lin.

In form this species closely resembles the common Leiobunus rotundus; but it is about one-fourth smaller, and has the legs proportionally rather shorter and weaker. The general colour is also very similar, the body of the female being testaceous marked with brown. A pale band extends up the front and middle of the cephalothorax from the anterior margin to the eye-eminence, enclosing two short dark lines placed close together in the centre towards the front edge. On each side of the pale band is an irregular dark-brown patch, somewhat semicircular in shape, the convexity being inwards, which terminates posteriorly and externally in a sinuous curved mark.
The eye-eminence is white, and the eyes black. The legs are marked with brown and white patches or rings. The distal extremities of the femora and tibiae are white and glistening, while the ends of each joint of the tarsus are dark brown, the middle being light-coloured. The sides of each trochanter and the proximal ends of the femora are dark brown. The abdomen is marked with a wide and somewhat indistinct dorsal band of a brown colour, which extends along the anterior two-thirds of its length and dilates posteriorly into two lateral prolongations. Behind this band is a pale transverse space occupying the whole or part of two rings. The terminating rings towards the apex are marked with brown.

The male, like the same sex in Leiobunus rotundus, is almost hemispherical in shape, the upper surface being flattened. The colour is dull yellowish brown, and the body is nearly concolorous; still the cephalothorax is faintly marked as in the female, the front and central part being white, and the eye-eminence being crested by two pale projecting rings which surround the eyes. The legs are dark brown.

This species has been confounded with L. rotundus; and Mr. Blackwall first called my attention to the distinctions between them. The two species may readily be distinguished by the following characteristics, which I have embodied in the Latin specific character:—1st. The front of the cephalothorax is dark in the centre in L. rotundus, while the same part is pale in L. Blackwallii. 2nd. The eyes are surrounded by a black ring in the former and a white one in the latter. 3rd. The brown abdominal band has a well-defined quadrate extremity in L. rotundus, while it terminates in two lateral projections in L. Blackwallii. 4th. The legs are more distinctly variegated with white and brown rings and marks in the latter than in the former.

In naming this species (which is met with in woods in different parts of England) after Mr. Blackwall, I am only rendering a slight tribute of gratitude to that eminent naturalist for the many favours and uniform kindness which I have received from him. I may truly say that the little knowledge of arachnology which I have acquired has been mainly derived through his assistance; and I really think that the difficulties with which this branch of science was beset in England a few years since (owing to the defective state of our scientific literature on the subject) were so great that, had not Mr. Blackwall kindly and liberally afforded me every information on my first application to him as a perfect stranger, I should have given up the study in despair.
Dr. T. S. Wright on Chrysaora hyoscella.

Genus Homalenotus, Koch.

Homalenotus quadridensatus.

I received a specimen of this species in 1857 from the Rev. A. M. Norman, which had been captured at Brighton; and the Rev. O. Pickard-Cambridge found several individuals among moss and heathbees, near Winchester, last year. All of these, as well as the specimens which I myself obtained in Buckinghamshire, were inhabitants of a chalky soil.

XLI.—On Hermaphrodite Reproduction in Chrysaora hyoscella.

By T. Strethill Wright, M.D.

[Plate XVIII.]

Prop. Allan Thompson, in his Treatise on the Ovum *, states that “the Discophore (Medusa) are of distinct sexes.” I have found this to be the case in all the Steganophthalmata and Gymnophthalmata which I have examined, with the exception of the subject of this notice.

Large individuals of C. hyoscella are hermaphrodite; but smaller ones are found which are unisexual, the male or female element being suppressed, as in some dicuous plants.

The best method of examining the structure of the reproductive apparatus of this animal is to place the Medusa, in its natural position, in a large basin of sea-water. The umbrella, all but its margin, is then to be cut away. The cavity of the stomach is thus laid open, and we have a good view of the interior aspect of the sub-umbrella. We find that each lip of the mouth divides, at its insertion, into three pillars. The central pillar projects as a large rounded bulb into the stomach, while the lateral ones diverge, pass outwards towards the margin, and afterwards converge and unite together, so as to form, with the bulb of the central pillar, the thickened opening or framework of the ovarian pouch. This opening is closed by the ovarian membrane, which consists of three layers—1. the endoderm, or intestinal layer; 2. the gelatinous layer; and 3. the ectoderm, or dermal layer. The ovarian membrane appears as a flocculent mass, from its being corrugated into numerous folds. By injecting air beneath it, it becomes inflated, and the folds are opened out. It then presents the appearance of a large transparent bag traversed by flat convoluted bands. These bands are the ovaries, and contain, between their endoderm and gelatinous layer, countless ova and planuloid larvae in various states of development.