

Wednesday, March 19th, 1919.—The Rev. F. D. MORICE, M.A., F.Z.S., Vice-President, in the Chair.

Lieut. L. A. Box, 80 Northampton Road, Croydon; Prof. J. Chester Bradley, M.Sc., Assistant Professor of Systematic Entomology, Cornell University, Ithaca, New York; Messrs. E. J. Burnett, M.A., 9 London Road, Forest Hill, S.E. 23; Bernard Douglas Cumming, Royal Exchange Assurance, Royal Exchange, E.C. 3; Capt Tickner Edwardes, R.A.M.C., The Red Cottage, Burpham, Arundel, Sussex; Lt.-Col. William Henry Evans, D.S.O., R.E., c/o Messrs. Cox & Co., 16 Charing Cross, W.C. 2; Mme. Fournier, 90 Boulevard Malesherbes, Paris; Messrs. H. C. Hayward, M.A., Repton, Derby; N. Marumo, Zoological Institute, Agricultural College, Imperial University, Komaba, Tokyo, Japan; Louis Nell, Imperial Bureau of Entomology, British Museum (Natural History), S. Kensington, S.W. 7; William George Fraser Nelson, 6 Craven Hill, W. 2; John Peel, Whittlesey, Cambs; Capt. Leslie Rawdon Stansfield, R.G.A., c/o Army and Navy Club, Pall Mall, S.W. 1; Major Watkin Temple, East Mersea, Essex; and M. P. Wytsman, Quatre Bras, Tervueren, Brussels, were elected Fellows of the Society.

Mr. H. Rowland-Brown communicated an extract from a letter addressed to him by Mons. Ch. Oberthür in reference to the death of the late Dr. Godman. Mr. J. H. Durrant exhibited a ♀ of *Areniphes sabella* Hmsn. which he had bred (July 23rd, 1917) from a larva found feeding in dates (May 3rd), purchased in London. Dr. H. Eltringham, specimens of the pupa and imago of *Cryptophaga rubescens*, and read notes. The Rev. F. D. Morice, 2 ♂♂ and a ♀ of *Tenthredella flavicornis* F. (*Tenthredo flava*, auct., nec L.) taken with many other specimens of the same at Lichfield in 1917. The only other British specimens are those recorded by J. F. Stephens, said to be from Plymouth. —GEO. WHEELER, *Hon. Secretary.*

ODONATA FROM MESOPOTAMIA.

BY KENNETH J. MORTON, F.E.S.

(PLATE V.)

The following account of Odonata from Mesopotamia (the lower part of the Euphrates and Tigris to the Persian Gulf being included in the term) is based primarily on a rather large collection of over 300 specimens sent home by Captain W. Edgar Evans, R.A.M.C., and handed to me for examination by his father, my friend Mr. William Evans. This collection has been supplemented by some material kindly sent to me by Captain P. A. Buxton, R.A.M.C., and by a smaller lot of specimens taken by Lieutenant P. J. Barraud, R.N., submitted by the favour of Mr. Herbert Campion.

The first mentioned collection was formed mainly round about Amara on the Tigris, where Captain Evans was stationed from the end of October 1917 to the beginning of November 1918. It was only in

the late autumn of 1918, rather too far on in the season for many dragon-flies, that he moved from this point, first to Ruz, at the foot of the Jebel Hamrin range of hills, north-east of Baghdad, and later proceeded to Kisil Robat, on his way to Kermanshah in Persia, at which place he was attacked by dysentery, which put an end to his work for the time being. Thus most of his insects came from the lower Tigris, and the specimens from Captain Buxton and Lieutenant Barraud are entirely from the lower sections of the great rivers. There is, however, enough to indicate the existence of a very interesting dragon-fly fauna containing representatives of the Mediterranean region mixed with Indian and Ethiopian elements. *Brachythemis fuscopalliata* appears to be a species of restricted range, as far as I know recorded from no other region than Mesopotamia and the Persian Gulf. The great abundance of *Selysiotthemis nigra* is worthy of special mention, and a somewhat aberrant *Ischnura* appears to be new. It is also of much interest to find that several species recorded by Bartenev from Bokhara occur commonly on the Tigris (Revue Russe d'Entom., xiii, 1913, No. 1, pp. 176-189).

The dragon-flies of Mesopotamia are included in de Selys' "Odonates de l'Asie Mineure" (Annales Soc. Ent. Belgique, xxxi, pp. 1-49). In that paper 83 species in all are recorded, but mostly from the Mediterranean coasts and the more northern parts of Asia Minor, relatively few being mentioned as from Mesopotamia and most of these European species from Malatia, which is hardly to be considered as coming within the boundaries of Mesopotamia at all. Other isolated records may exist, but not much of importance, and it would perhaps be premature to attempt even a preliminary list until something has been done in the way of exploring the northern parts of the country and the hills and valleys to the east of the Tigris. It is almost certain that important additions to the list will eventually be found there, and may include interesting species that have been recorded from Asia Minor, the Caucasus, Northern Persia, Turkestan, and away farther east to Kashmir.

In the lower part of the region at least the climate seems to be almost tropical, and Captain Evans says that dragon-flies are found all the year round. He mentions, for example, seeing quite a number of *Crocothemis* in a sunny field at Kisil Robat in December (one of his specimens is dated the last day of the year), and in the other winter months the same species occurred (although in much reduced numbers compared with the summer) in warm sheltered places on sunny days. De Selys' original record of *B. fuscopalliata* is based on specimens from

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MEETINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—October 1st and 15th, November 5th and 19th, December 3rd, 1919, and January 21st, 1920 (Annual Meeting).

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the lower Euphrates in January and February, and *Ischnura evansi* is already out in February and March, *Anax* and *Hemiandax* being also in evidence early in the latter month.

The dragon-fly fauna of lower Mesopotamia is probably not extensive, the drying up of the marshes in the great summer heat having no doubt the effect of restricting it to such species as can accommodate themselves to this condition or can use the large rivers and irrigation canals as alternative breeding waters. It is to the more elevated parts of the country that one must look for fresh additions to the lists.

In the notes that follow I have quoted freely observations made by Captain Evans on many of the species taken by him as recorded in his letters home. These seem worthy of preservation, and may serve to make the list more useful than if it were confined to a bare enumeration of the species taken. Having regard to the extent of his collections in other orders (to say nothing of plants) it might be thought that dragon-flies received but a small share of attention. But the care and accuracy with which these and other things have been handled, and the magnitude of the collections as a whole, tend rather to convince me that no species of dragon-fly that was seen has escaped incorporation! It is of significance that so keen and experienced an entomologist as Captain Buxton, working in the same district, does not appear to have met with any additional species. Lieutenant Barraud found *Trithemis annulata* at Basra, a species which is absent from the other collections.

1.—*Sympycna paedisca annulata* Selys.

2 ♂♂, 2 ♀♀, November 6–18th, 1917; 6 ♂♂, 6 ♀♀, April 28th, May 5–6th and 12th (Amara); 1 ♂, 1 ♀, November 30th, 1918, Jebel Hamrin, N.E. of Baghdad (*Evans*); also 1 ♂, Amara, May 14th, 1918 (*Buxton*). Those of April 28th are the most immature. The examples show little variation in the bronze markings; some of them have a tooth-like marking projecting from the outer edge of the bronze median line on the thorax.

Evans wrote 20.iv.18: "These were not abundant and were usually observed singly resting on grass in similar situations to those described for *Crocothemis servilia*. None have been observed this year; all the specimens seen occurred last autumn." 5.v.18: "This dragon-fly was first seen this season on April 26th resting among long grass in a palm garden on the left (north) bank of the Tigris above Amara. To-day I got three specimens among grass by the side of the Masharra Canal. The specimens are found singly, and are not yet numerous.

The species rests with the wings folded together backwards parallel to the body. Both sexes about equally frequent."

Evans's observation of the position of the wings is interesting. In this respect it differs from *Lestes* and agrees with the closely allied European *S. fusca*. The latter is remarkable on account of its habit of hibernating, pairing taking place in the early spring.

S. paedisca annulata was originally described from Malatia and Antioch. The example from Quetta referred to by me as *S. fusca*, Trans. Ent. Soc. Lond. 1907, p. 308, is no doubt of the same form. Further information regarding the different Asiatic forms will be found in Bartenev's paper, "Contributions to the Knowledge of the Species of the Genus *Sympyena*, etc." (Annuaire du Mus. Zool. de l'Academie Impl. des Sciences de St. Pétersbourg, t. xvii, 1912).

2.—*Ischnura evansi*, n. sp.

♂. Head above black; frons anteriorly with a broad yellowish band, with a yellow line or elongate spot on each side reaching to about the base of the antennae, and the eyes margined with the same colour to about the same level;

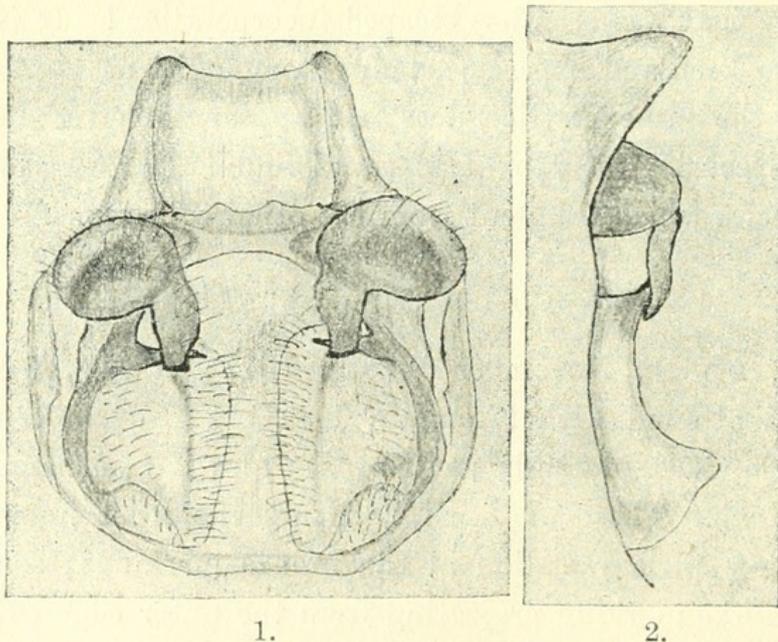


Fig. 1.—*Ischnura evansi*. Face view of appendages, from a preparation of the last abdominal segment, cleared and mounted in balsam.

2.—Profile view, but at an angle sufficient to show the perpendicular branch of superior appendage.

post-clypeus bronzed black, ante-clypeus and labrum yellowish, the latter with the proximal margin narrowly black, this black line rather sharply produced in the middle; post-ocular spots moderate, round. Prothorax black, anterior margin bluish, the sides yellowish with pale hairs; posterior margin also marked with yellowish and produced in the middle into a short, broad lobe with very slightly rounded almost truncate margin. Thorax black, antehumeral lines often absent, when present very fine, greenish or bluish, and

sometimes interrupted; sides pale bluish or greenish with two short black lines on the sutures near the base of the wings. Legs bluish white, with black spines, femora and tibiae black externally, tarsi and claws also with dark annulations. Abdomen bronzed black above, yellowish or bluish at the sides and beneath, eighth segment entirely blue, sternites with a black line up to about the eighth segment. First segment with a quadrate mark occupying nearly the whole dorsal surface, with a fine blue line posteriorly; segment two with metallic sheen dorsally; 1-3 blue at sides and beneath; 4-6 dorsally narrowly yellow at the base except at the dorsal carina; 3-6 narrowly black on the sides at their distal end; 7-9 blue at sides and beneath. Hind margin of tenth segment elevated, when seen from above nearly semicircularly excised. The appendages viewed directly from the side little visible, the superior showing as a somewhat triangular process and the inferior as a pale tubercle; viewed directly from behind the superior are black, ovate, inwards with a large perpendicular truncate branch; inferior with a large black acute tooth or process turned inwards towards the centre. Wings hyaline, neuration black; pterostigma rhomboidal, bordered with rather thick black veins, centre black (less densely so in hind wings), leaving a narrow, pale margin all round; it covers rather less than one cell in both wings.

♀. Head and thorax much as in the ♂, but the prothorax has two small pale lateral dots; ante-humeral stripes on thorax broad and distinct; black on legs reduced, sometimes partly broken up into dots; dorsal spot on first segment of abdomen cleft by a pale line for a considerable part of its length (may be divided entirely). Pterostigma, as a rule, less dark in the centre than in the male. Examples occur having the thorax and first abdominal segment as in the male.

Easily separated from *Ischnura bukharensis*, occupying the same area, by the pterostigma of the fore wing of the ♂, which in *I. bukharensis* has the outer portion pale as in the more typical species of the genus. In *I. bukharensis* the prothoracic lobe is lower and the neuration of the wings at the apex shows a closer network in both sexes. No red females have apparently been found, a circumstance which might suggest association with *Enallagma*, but, on the whole, it seems preferable to regard the species as a somewhat aberrant *Ischnura*. In the material examined the 8th abdominal segment is constantly blue in both sexes.

Length of hind wing . . . ♂ 16-17; ♀ 15-20 mm.
 ,, abdomen . . . 23-25; 20-26 mm.

1 ♀ on bushes by side of Tigris, Amara, November 5th, 1917; a long series of both sexes from the Azizah Marshes, near Carraba Jedeid, between Masharra and Chahala Canals, about twenty miles from Amara, March 2nd, 1918; and further ♂ ♂ and ♀ ♀, chiefly from gardens by the Masharra and from near the Tigris, March 17th, 19th, 22nd, April 2nd, 21st, 28th, and May 2nd, 1918 (*Evans*); also ♂ ♂ and ♀ ♀ at Amara, March and April; ♀ ♀, Qurnah, May 17th; Hamar Lake,



Morton, Kenneth J. 1919. "Odonata from Mesopotamia [Part 1]." *The Entomologist's monthly magazine* 55, 143–151.

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