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NOTES ON SYRPHIDAE (DIPTERA). III.

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THE GENUS BRACHYOPA Mg.

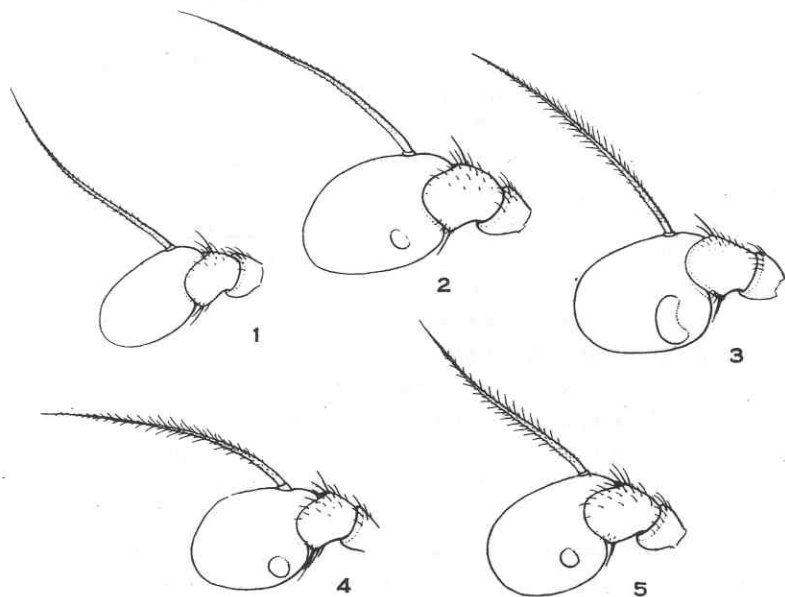
*Brachyopa bicolor* Fln., as at present distinguished from other Continental species, has been considered to be the only representative of the genus found in this country, and there has never been much doubt about its identity. It was, therefore, somewhat disturbing to find that there appeared to be two distinct forms among British specimens, one with practically bare arista and one with that organ pubescent. An arrangement of the specimens under these two forms still left one dissatisfied because other small differences did not fit, and it was not until the discovery of the importance of the shape and size of the sensory pit present in both sexes on the third antennal segment that order appeared, and the presence of four distinct British species was revealed.

The genus *Brachyopa* has been limited by some taxonomists to those species with bare or slightly pubescent arista, those with a long-haired arista, such as *B. conica* Pnz. and *B. testacea* Fln., being placed in the genus *Hammerschmidtia*, but this is certainly incorrect; these two species agree with *Brachyopa* in the very pointed subapical or first posterior wing-cell, while the long hairs on arista are only exaggerated pubescence, present on all sides, and not confined to upper and under sides only as in *Hammerschmidtia ferruginea* Fln. For the purpose of this paper these two, which are not British, are excluded; and a further elimination of the non-British *B. dorsata* Ztt. with its distinctly yellowish sides (more than humeri and postalar calli) to disc of thorax, and *B. arcuata* Pnz. with its clouded middle cross-vein and small dark patch at end of 'vena spuria' above the outer end of discal cell, leaves five Continental species known to the author, four of them being British. All these species have thorax dusted greyish or slate-grey with indications of four darker stripes, yellowish abdomen with a tendency to internal discoloration (especially in some species) and yellow legs with darker tarsi, while there is a sexual difference in the dusting of the face, which covers the whole face in the male and leaves the lower half bare in the female. These species may be tabulated as follows:—

of *conica* a few = with 2nd cell left

- 1 (4) Arista practically bare (figs. 1 and 2), hairs shorter than arista with
- 2 (3) Third antennal segment with no sensory 'pit' on inner side (fig. 1); hairs on notopleural area of thorax mainly pale; face less produced. .... *B. insensilis* sp.n.

- 3 (2) Third antennal segment with a small round sensory 'pit' on inner side below near base (fig. 2); hairs on notopleural area of thorax all dark; face more produced ..... *B. bicolor* Fln.
- 4 (1) Arista pubescent (figs. 3, 4 and 5), hairs about 2 times as long as arista width
- 5 (6) A large kidney-shaped sensory 'pit' on third antennal segment (fig. 3) ..... *B. scutellaris* Dsv.
- 6 (5) A smaller, more rounded sensory 'pit' on third antennal segment.
- 7 (8) Dark hairs on apical half of sidemargins of second abdominal tergite; sensory 'pit' larger and nearer lower side of third antennal segment (fig. 4). (Not British) ..... *B. plena* sp.n.
- 8 (7) Hairs on sidemargin of second abdominal tergite all pale; sensory 'pit' smaller and not so near lower side of third antennal segment (fig. 5) ..... *B. pilosa* sp.n.



Antennae of *Brachyopa* spp.: 1, *B. insensilis* sp.n.; 2, *B. bicolor* Fln.; 3, *B. scutellaris* Dsv.; 4, *B. plena* sp.n.; 5, *B. pilosa* sp.n.

These species all differ in the structure of the male genitalia, especially in the processes at the end of the genital (ninth) sternite which encloses the penis, but it is difficult to obtain uniform mounts of these processes from which to make drawings without abundant material, and this is not at present available.

#### *B. insensilis* sp.n. ♂ ♀.

♂. Frons dusted greyish except very narrowly in front above antennae. Face in profile short, very concave, epistoma not much produced. Antennae comparatively small, longer than wide (fig. 1), arista yellow. Humeri the

same colour and dusted greyish as rest of thoracic disc, postalar calli tawny; scutellum tawny-yellow, dusted only on extreme basal margin and without a transverse depression before tip. Pleurae with very little tendency to yellow ground colour except on prosternum and hindmargin (between hind coxae and spiracle). Pubescence on disc mainly short and dark, but with a considerable mixture of pale hairs, especially on sides and hindmargin. Abdomen with great tendency to internal discoloration. Pubescence on sidemargins all pale. Legs with comparatively slender hind femora. Pubescence mainly pale except for the black spines beneath hind femora. Wings long and narrow; 'vena spuria' not very distinct; an appendix usually present at bend in subapical crossvein.

♀. Resembling male, but eyes separated on frons at ocelli by about two-fifths width of one eye, slightly wider in front; frons, as usual in genus, dusted greyish except in front above antennae, where it is yellow and shining.

Length about 6 mm.

This species was once taken freely by the late Mr. F. Jenkinson on wounds in elm trees at Cambridge, and I possess two females caught in my garden at Newmarket and a male taken at Barton Mills (Suffolk). Mr. C. J. Wainwright has a male caught at Upper Arley (Worcestershire). There were specimens in Bigot's collection without history.

#### *B. bicolor* Fln.

♂. Frons extensively shining yellowish, dusted only on upper angle and very narrowly along eye-margin. Face longer and epistoma rather more produced than in *insensilis*. Antennae larger (fig. 2), arista brown. Humeri, postalar calli and basal half of scutellum the same colour as rest of thoracic disc, end of scutellum tawny-yellow and more shining. In immature specimens postalar calli may be indistinctly tawny and yellow colour of scutellum may spread towards base, but basal half is still dusted, not shining. There is also a more or less distinct transverse depression across scutellum. Pleurae, except prosternum, grey. Pubescence on disc rather dense and all dark, except on extreme front margin. Abdomen with some dark hairs on disc and about side-margin of second tergite. Legs strong, hind femora especially stouter than in other species, and conspicuously spinose beneath; middle femora also with a few small spines on each side towards tip beneath. Fine pubescence on all legs mainly pale. Wings with 'vena spuria' more distinct, and a more even curve to subapical crossvein than in *insensilis*; seldom any indication of an appendix at bend in subapical crossvein.

♀. Resembling male except for its wide frons, and (as usual) less extensively spinose hind femora, but there are no dark hairs at sides of second abdominal tergite.

Length about 7 mm.

The restricted use of Fallen's name for this species appears to be warranted by his description of '*apex scutelli . . . testacea*' (his var.  $\beta$  having '*scutello toto testaceo*'). Also his specimens were taken '*in succo distillante Quercus*,' and to my knowledge the above species and *scutellaris* (answering to Fallen's species and var.) occur in such situations.

*B. bicolor* is not, in my experience, anything like so common as *B. scutellaris*. I possess two old English males from 'Dossiter's Collection,' a male bred from, and two females taken on, a *Cossus*-infested oak in the New Forest, and a female also taken in the New Forest (Hants) by F. C. Adams. There are other specimens from the New Forest in the British Museum Collection, and Mr. C. J. Wainwright took it in company with *B. scutellaris* on a *Cossus*-infested oak in Denny Wood (New Forest) in June, 1938. There were a pair in Kowarz's collection from Bohemia and a male without history in Bigot's collection.

*B. scutellaris* Dsv.

♂. Frons yellow, faintly dusted on upper half. Face short and concave, epistoma not much produced, but appearing more so when clypeus is not retracted. Humeri, postalar calli and scutellum yellowish, the first usually dusted so as partially to hide ground colour in male, the last rather large and with no distinct transverse depression. Thorax viewed from behind with the sutures proceeding from notopleural area darkened, the darkened end of each suture partially interrupting the longitudinal grey stripe between the darker median and side stripes. This is not so in the next two species. Pleurae of yellowish ground colour with extensive greyish patches, especially sterno- and hypo-pleura mainly grey. Pubescence on disc short and dark, but with numerous pale hairs round margin especially on notopleural area. All hairs on scutellum dark. Abdomen with some dark hairs on hindmargin and at sides of second tergite, and on disc of third and fourth tergites. Legs with pubescence towards end of all femora, and on all tibiae and tarsi mainly dark. Wings with 'vena spuria' faint about base, more distinct towards tip.

♀. Resembling male. Dusted part of frons very pale grey with indications of yellow ground colour showing through. Epistoma slightly more produced than in male. Humeri more distinctly yellowish.

Length about 6.25 mm.

Desvoidy knew the female only, and his description of '*humeris scutelloque testaceis*' and arista '*subvillosa*' appears to justify the use of his name for this species, which is easily recognised by the large reniform sense-organ on the third antennal segment (fig. 3), and is the most common and widely distributed of the British species.

I have records from Cambs, Suffolk, Sussex, Surrey, Hants, Kent, Devon, Hereford, Gloucester, Worcester, Oxford, Berks, Lancs and Glamorgan. There were specimens without history in Bigot's collection.

*B. pilosa* sp.n. ♂.

♂. Frons dusted only on upper angle as in *bicolor*. Third antennal segment small, the small rounded sensory 'pit' well above lower margin of segment (fig. 4). Humeri seen from above dusted greyish like front of thorax, but translucently yellowish on lower side, postalar calli indistinctly tawny, scutellum

all tawny-yellow without transverse depression. Pubescence on disc rather longer than usual, dark, with a mixture of pale hairs round margin and especially round margin of scutellum, which has no transverse depression. Pleurae with yellow ground colour showing in patches as in *scutellaris*. Abdomen with a few short dark hairs on disc of second to fourth tergites, but hairs at sides of second tergite all pale. Pubescence on femora mainly dark.

Length about 7 mm.

This species is readily distinguished from *scutellaris* by the antennal sensory organs and many other characters but closely resembles the next species.

*B. pilosa* is at present known only from four males taken at Lyndhurst (Hants) by Col. Yerbury early in May in 1894, '96, '97, one in my collection and three in the British Museum. There is a male in Kowarz's collection from Bohemia.

*B. plena* sp.n. ♂.

♂. Differing from *pilosa* in having frons more extensively dusted, antennal sense-organ larger and very close to lower margin of segment (fig. 5). Normal (shorter) pubescence on thorax. Scutellum with a slight transverse depression. Numerous black hairs on apical half of second abdominal tergite at sides.

Length about 7 mm.

Described from two males in Kowarz's collection from 'Waldegge,' Bohemia.

A NEW SPECIES OF XYLOTA.

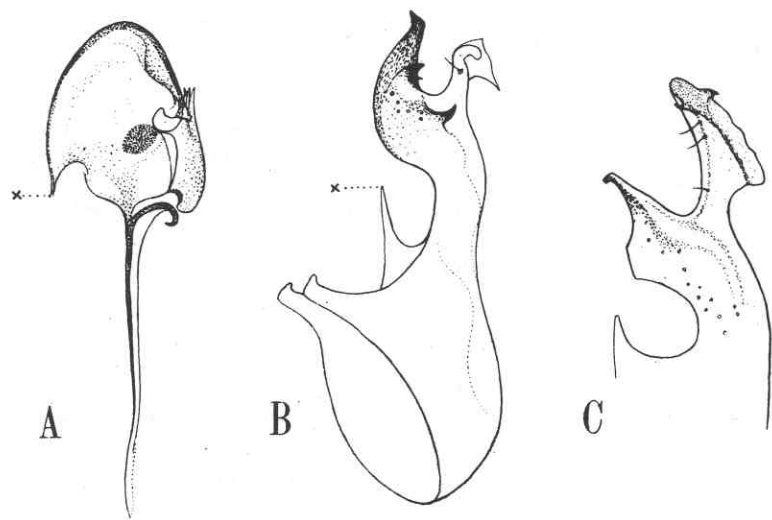
In 1935 my friend Mr. Colbran J. Wainwright called my attention to a peculiar variety of *X. sylvarum* L. taken by him in Bagley Wood, near Oxford, on July 21st of that year. This I found agreed (except in having no small orange spots on second abdominal tergite) with the two odd males mentioned by Mr. Verrall in British Flies, Vol. VIII, p. 604, one (presumably British) labelled 'bought of Saunders, 12/1879,' the other in Kowarz's collection labelled 'Marbd. 21.7.69,' and that I possessed another male from Dr. Capron's collection probably taken in the Guildford district of Surrey. It seemed certain that they represented something more than a variety of *sylvarum*, and an examination of the genitalia confirmed my suspicions. I have now seen two additional specimens, both males, taken by Mr. Allen M. Lowe in the Isle of Wight in the second week of August, 1935, when they were 'hovering in a small cloud round the lower branches of an oak.' The following description should enable anyone to recognise the species.

*Xylota xanthocnema* sp.n. ♂.

Closely resembling *X. sylvarum* L., but with entirely yellow tibiae and yellow ground colour beneath the golden haired side spots on third abdominal

tergite. Easily mistaken for a rather small *X. sylvarum*. Thoracic pubescence shorter and more recumbent (more like that of female *sylvarum*). The yellow ground colour of spots on third abdominal tergite best seen when viewed from behind, and from this point of view the second tergite will be found to have a much narrower median dark line separating the steel-coloured side patches than in *sylvarum*, and occasionally there may be a pair of small yellowish spots on this tergite. Hind trochanters with smaller blunt spurs, the more basal one of the two especially inconspicuous; all femora rather shorter haired than, and tibiae without the dark markings of, *sylvarum*. Genitalia not unlike those of *sylvarum* except for marked differences in lateral processes at end of genital (ninth) sternite, this sternite being modified (as in most Syrphidae) into a somewhat tubular shape to enclose the penis.

Length 11—12 mm.



In above figures 'A' is the penis and 'B' the ninth (genital) sternite with one of the lateral terminal processes of *X. xanthocnema*, 'X' being the point of attachment of the penis. 'C' is the corresponding lateral process of *X. sylvarum* drawn to the same scale. These processes, one on each side of the penis, are not always symmetrical; that on one side may vary in details from that on the other side, but the general plan in each species is as shown in the figures. The penis is figured as seen in profile, and viewed thus is very similar in the two species, but when viewed from in front there is a constriction at a little more than one-third from top, and the part above this constriction is wider in *xanthocnema* and not so cone-like as in *sylvarum*.

Raylands, Newmarket.

March 19th, 1939.