

Identification of *Porrhomma* species

Female specimens of *Porrhomma* present particular problems of identification not only for the beginner, but in some cases for experienced arachnologists as well and it can certainly be considered a critical genus in our fauna. With the exception of two species (*P. errans* and *P. egeria*), which may be distinguished from other British members of the genus by details of their leg spination, all species require detailed and critical examination of the epigynes. As in many spiders, the external appearance of the epigyne in ventral view can be quite variable, particularly in the appearance of the internal structures seen through the cuticle, and care needs to be taken with isolated females for this reason. While most species can be reliably distinguished by careful examination of the epigyne in ventral view, there are a number of closely similar species pairs for which it is often advisable to dissect out and clear the epigyne so that it can be mounted on a slide and studied in dorsal view. Wherever possible, specimens should be compared with material in a reference collection which has been either identified or confirmed by an experienced arachnologist.

In the account below, the species are divided into five groups on the basis of leg spination. The first three groups present no particular problems of identification but the last two, which contain six out of the eleven species recorded from Britain, include a number of particularly difficult species.

Group I. All metatarsi with a single spine.

Porrhomma errans (Blackwall, 1841)

This species can readily be distinguished by the presence of a spine on each metatarsus which appears to be a reliable character. The external epigyne (Fig. 1) sometimes resembles that of *P. pallidum* but the epigynal opening is normally somewhat larger and the spermathecal ducts, seen through the cuticle are more curved and appear broader than those of *P. pallidum*. The species appears to be relatively scarce in Britain and has been found in a wide range of habitats. Although possibly most often in grassland, it has also been taken in woodland, coastal landslips, gardens and allotments. Harvey (in Harvey *et al.* 2002) suggests that it may have a requirement for some bare ground as part of its micro-habitat.

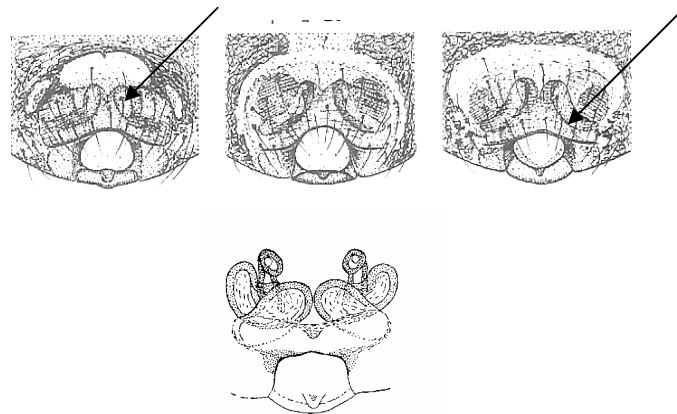


Figure. 1. *Porrhomma errans*. Epigynes in ventral view. Arrows indicate spermathecal ducts as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Group II. All metatarsi spineless, femur I with two prolateral spines in addition to dorsal spines.

Porrhoma egeria Simon, 1884

The presence of two prolateral spines on femur I clearly distinguishes *Porrhoma egeria* from all other British species. The epigyne (Fig. 2) can be somewhat similar to that *P. rosenhaueri* and it has very small eyes, though not as extremely reduced as in *P. rosenhaueri*. The single prolateral spine on metatarsus I immediately distinguishes the latter species from *P. egeria*. This is again a relatively scarce species in Britain, although occurring throughout the country. Its habitat is probably largely subterranean and it has been taken in caves, mines, rock scree and occasionally cellars.

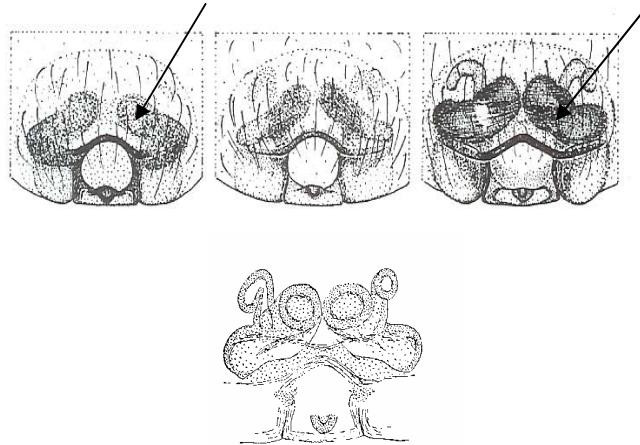


Figure 2. *Porrhomma egeria*. Epigynes in ventral view. Arrows indicate spermathecal ducts as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Group III. Metatarsi spineless, femur I with one prolateral spine and with no dorsal spines, tibia I with prolateral spine.

Porrhoma oblitum (O.P-Cambridge, 1870)

The epigyne of this species is very similar to that of *Porrhomma montanum* but normally the epigynal opening is slightly narrower and the spermathecal ducts, as seen through the cuticle, have more of a comma shape (Fig. 3). The epigyne is also closely similar to that of *P. pygmaeum* (see below) and the two species can only reliably be distinguished by the presence of dorsal spines on femur I in *P. pygmaeum*. *P. oblitum* is usually very dark in colour (like *P. pygmaeum*) while *P. montanum* is usually paler and more orange-brown. This is a very local spider and is usually found in very wet litter in damp woodlands, including fen carr. It has also been swept from the field layer of fens.

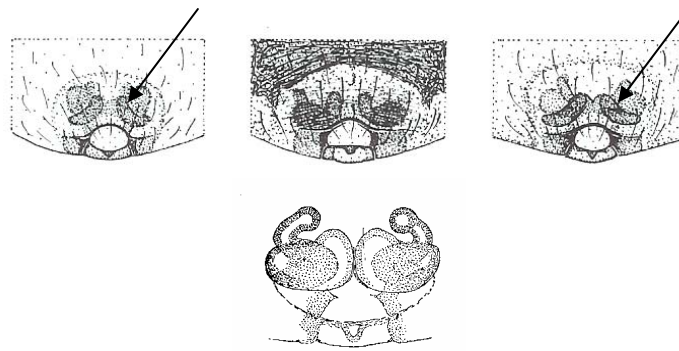


Figure 3. *Porrhomma oblitum*, epigynes in ventral view. Arrows indicate spermathecal ducts as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Porrhomma montanum Jackson, 1913

The epigyne of *P. montanum* resembles that of *P. oblitum* but the epigynal opening is usually slightly narrower and the spermathecal ducts seen through the cuticle are straighter and less comma shaped (Fig. 4). The cleared epigyne is clearly distinct from that of *P. oblitum*. This species is normally somewhat larger than *P. oblitum*. *P. montanum* is typically an upland species where it occurs beneath rocks on mountains.

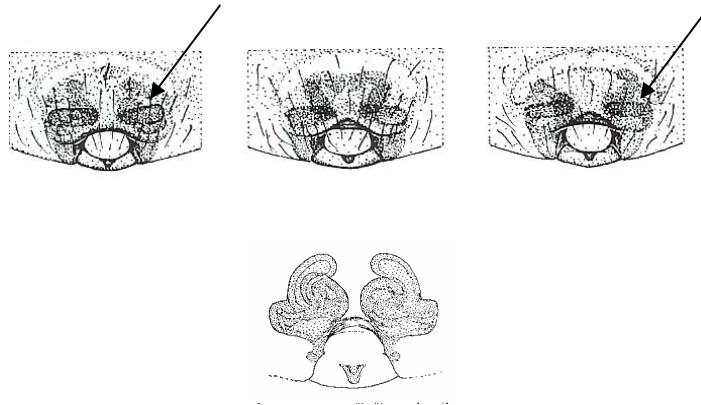


Figure 4. *Porrhomma montanum*, epigynes in ventral view. Arrows indicate copulatory ducts as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Group IV. Metatarsi spineless, femur I with one prolateral spine and with no dorsal spines, tibia I without prolateral spine.

Porrhomma cambridgei Merrett, 1994

This species, only recently re-validated, closely resembles *P. oblitum* but lacks a prolateral spine on tibia I and has much smaller eyes. The legs are relatively longer and more slender than those of *P. oblitum* with the ratio of femur I length to carapace length of 0.82-0.91 as compared with 0.70-0.75 in *P. oblitum* (Merrett, 1994). As in other *Porrhomma* species, the appearance of the epigyne is variable (Fig. 5) and probably not distinguishable with certainty from that of *P. oblitum*. This is apparently a rare species in Britain, recorded from only four 10 km squares. It occurs in grassland and arable fields and the reduced eyes and pale colour suggest it may be a subterranean species, living in soil cracks.



Figure 5. *Porrhomma cambridgei*, epigynes in ventral view. Note close similarity to *P. oblitum* (Fig. 3 above).

Group V. Metatarsi spineless, femur I with one prolateral spine and with one or two dorsal spines.

Among the six species included in this group, two, *P. pygmaeum* and *P. pallidum* have epigynal openings that are markedly smaller than the others. The remaining four species can be distinguished by a combination of the size and shape of the epigynal opening and the form of the internal ducts as seen through the cuticle. A number of the species can, however, have somewhat similar epigynes when viewed externally and it is sometimes helpful to examine the internal structure by dissecting out the epigyne and making a temporary slide mount.

Porrhomma pygmaeum (Blackwall, 1834)

P. pygmaeum has an epigyne with a particularly small opening which is notably narrower than that of *P. pallidum*. The spermathecal ducts, seen through the cuticle, are distinctive and frequently appear as two round spots (Fig. 6). The epigynal opening often appears much more opaque than in the other species of this group. The region anterior to the epigynal opening is often heavily pigmented and in this case it may be helpful to dissect and clear an epigyne to reveal the internal structures. In the cleared epigyne, the spermathecae are directed inwards (Fig. 6) while those of *P. pallidum* are directed forwards (Fig. 7). This is by far the commonest species of the genus in Britain and is normally found in damp marshy habitats. It is also a very common aeronaut and consequently may be found in all habitat strata of grasslands, scrub and woodland.

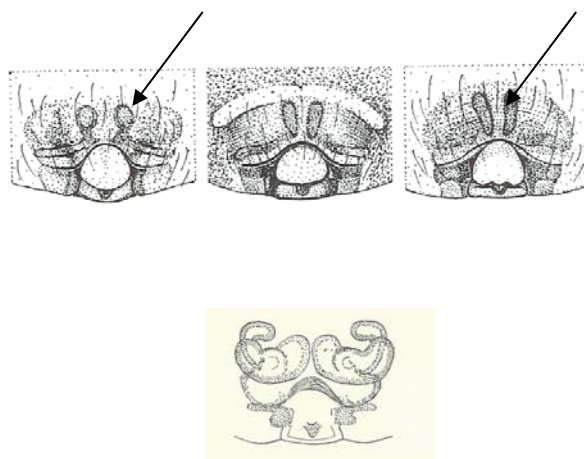


Figure 6. *Porrhomma pygmaeum*, top row, epigynes in ventral view, Arrows indicate spermathecae as seen through the cuticle, often less clearly visible than this. Bottom, cleared epigyne viewed ventrally.

Porrhomma pallidum Jackson, 1913

The epigyne of *P. pallidum* viewed ventrally is very similar to that of *P. pygmaeum* but the epigynal opening is relatively much wider. In addition, the spermathecal ducts, seen through the cuticle, appear quite different, resembling two “eyebrows” above the opening (Fig. 7). The ends of the spermathecae nearly always show through the cuticle as two distinct round spots. The spider is also normally much paler in overall colour than *P. pygmaeum* although recently moulted specimens of the latter species may resemble *P. pallidum* in colour. In the cleared epigyne, viewed dorsally, the spermathecae are directed forwards, rather than inwards as is the case in *P. pygmaeum* (Fig. 6). This is a widespread species in Britain, although commoner in the north than the south. It occurs in the ground layer of both woodlands and upland habitats, under stones or in moss.

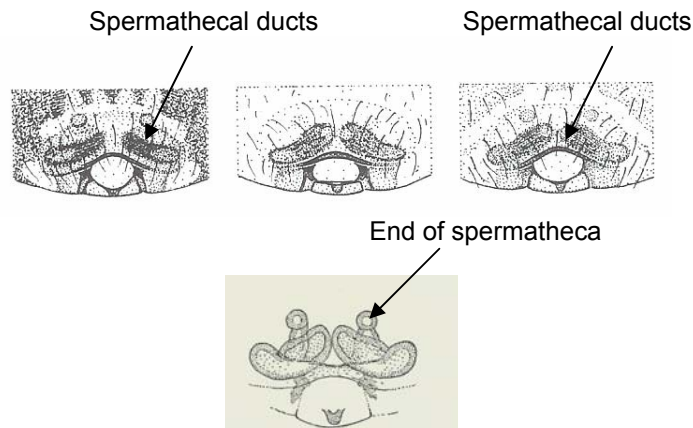


Figure 7. *Porrhomma pallidum*, top row, epigynes in ventral view, Arrows indicate spermathecal ducts as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Porrhomma microphthalmum (O. P.-Cambridge, 1871)

In the epigyne of *P. microphthalmum* viewed ventrally, the spermathecal ducts seen through the cuticle are broad and appear like a pair of posteriorly diverging tear-drops, even in rather dark specimens (Fig. 8). The epigynal opening is rather square in outline compared with that of *P. convexum* (Fig. 9). The epigyne is similar in shape to that of *P. rosenhaueri* but the latter occurs only in caves and is extremely rare in Britain. The cleared epigyne viewed ventrally differs from that of *P. convexum* in that the spermathecae are directed forward (Fig. 8) whereas those of *P. convexum* are directed inwards (Fig. 9). *P. microphthalmum* is also a widespread species but, unlike *P. pallidum* is much more common in central and south-eastern Britain. It is commonly found in agricultural fields and sparsely vegetated grasslands including mudflats and saline grasslands. It is reputed to be partially subterranean, living in cracks in the soil.

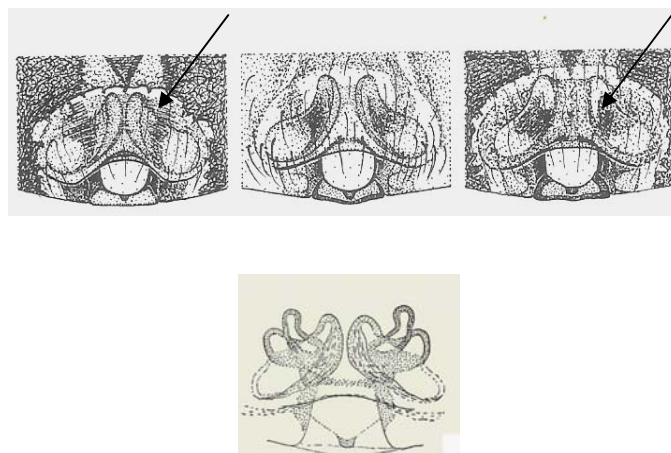


Figure 8. *Porrhomma microphthalmum*, top row, epigynes in ventral view, Arrows indicate spermathecal ducts as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Porrhomma convexum Westring, 1861

The epigyne of *P. convexum*, viewed ventrally, is somewhat similar to that of *P. microphthalmum* but differs in that the epigynal opening is often slightly narrower and is distinctly more rounded anteriorly (Fig. 9). In this species the spermathecal ducts viewed through the cuticle are narrow and show a right angled bend with the central portion directed forward so that, in some specimens they appear like exclamation marks (Fig. 9). The cleared epigyne, viewed ventrally, is quite different in form from that of *P. microphthalmum* (Fig. 8). *P. convexum* is widespread but uncommon in central and northern England but rare in Scotland and southern England. It is normally found in damp mines and caves but it has also been taken in culverts, cellars, rock piles and thick undergrowth.

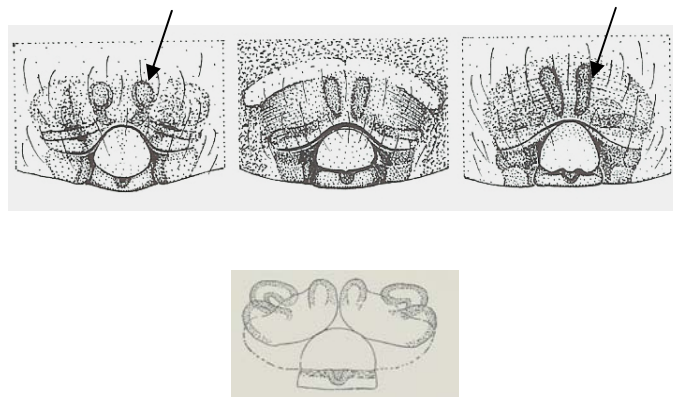


Figure 9. *Porrhomma convexum*, top row, epigynes in ventral view, Arrows indicate spermathecae as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Porrhomma campbelli F.O. P.-Cambridge, 1894

This species has a very distinctive epigyne with an opening that is more or less pear-shaped (distinctly narrowing posteriorly) and with extremely broad, dark ducts seen through the cuticle lying transversely across the epigynal plate (Fig. 10). In the cleared epigyne, viewed ventrally, the massive epigynal ducts are characteristic and unlikely to be easily confused with that of any other *Porrhomma* species. It is a fairly large species with relatively small eyes but not as small as those in *P. egeria*. This is a widespread but rare species in Britain which has been collected from beneath rocks and in dry litter of reedbeds as well as in mole burrows. Sometimes in heathland and grassland, it has also been recorded ballooning on upland moorland but is never numerous. It has been suggested that it may be an inhabitant of subterranean mammal burrows.

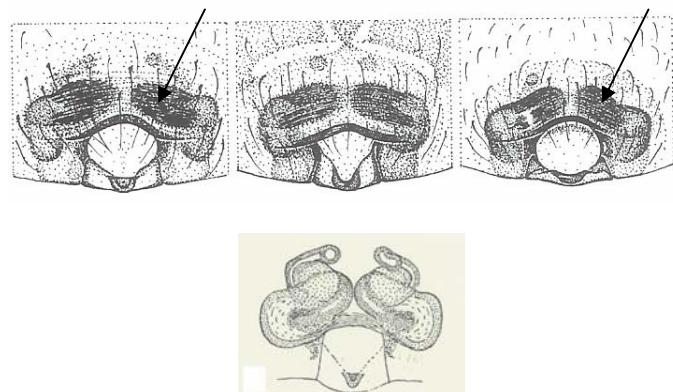


Figure 10. *Porrhomma campbelli*, top row, epigynes in ventral view, Arrows indicate ducts as seen through the cuticle. Bottom, cleared epigyne viewed ventrally.

Porrhomma rosenhaueri (L. Koch, 1872)

P. rosenhaueri has an epigyne which closely resembles that of *P. microphthalmum*. However, the epigynal opening is slightly narrower and has a small notch in the posterior border of this opening (Fig. 11). It occurs exclusively in caves and is the rarest of all *Porrhomma* species in Britain, having been recorded from only two sites in S. Wales.

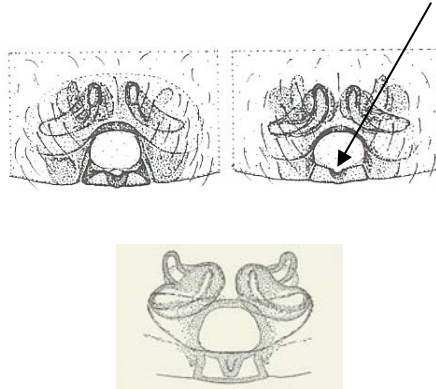


Figure 10. *Porrhomma rosenhaueri*, top row, epigynes in ventral view. Arrow indicates notch in posterior margin of epigynal opening. Bottom, cleared epigyne viewed ventrally.

Figures from Locket & Millidge (1951), Merrett (1994) and Roberts (1987), with grateful thanks to the authors.

References

- Locket, G.H. & Millidge, A.F. 1951. *British Spiders* Volume 1. Ray Society, London.
Merrett, P. 1994. *Porrhomma cambridgei*, replacement name for *Porrhomma oblongum* (O.P.-Cambridge, 1871), revalidated and redescribed from southern England (Araneae. Linyphiidae). *Bull. Br. arachnol. Soc.* **9**: 318-320.
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