

Genus *Protapion*

Reference

The source of this translation can be found at <http://www.coleo-net.de/coleo/texte/protapion.htm>. These German keys are close to the earlier work by Dieckmann, Behne and Hoffmann in *Die Käfer Mitteleuropas*. Translated by Mike Hackston and reproduced here with the kind permission of Dr Arved Lompe.

Checklist

From the Checklist of Beetles of the British Isles, 2012 edition, edited by A. G. Duff.

Genus **PROTAPION** Schilsky, 1908

Food plant is *Trifolium* unless otherwise stated

apricans (Herbst, 1797)

assimile (Kirby, 1808) ssp. *assimile* (Kirby, 1808) and ssp. *ryei* (Blackburn, 1874)

difforme (Germar, 1818)

dissimile (Germar, 1817)

filirostre (Kirby, 1808) (on *Medicago* buds)

fulvipes (Geoffroy in Fourcroy, 1785)

laevicolle (Kirby, 1811)

nigritarse (Kirby, 1808)

ononidis (Gyllenhal, 1827) (on *Ononis* pods)

schoenherri (Boheman, 1839)

trifolii (Linnaeus, 1768)

varipes (Germar, 1817)

Upper surface appearing bare, black and shining. Elytra sometimes with a very slight metallic sheen. The legs are long and almost always have yellow femora. The exception is *filirostre* which has the legs completely black, but this species has a long slender rostrum which is at least as long as the head and pronotum combined (males) or longer (female) - this feature will differentiate it from all other black species which appear bare. Body very convex and with very distinct shoulders. Specimens should be set so that the trochanters are visible and so they can be viewed from the side.

Image Credits

Unless otherwise indicated the photographs of whole beetles in this key are reproduced from the *Iconographia Coleopterorum Poloniae*, with permission kindly granted by Lech Borowiec.

Note

This is a very difficult genus to identify to species with some of the characters used showing variation and also showing differences between the sexes. For any certainty you will need to refer to a reference collection in a museum.



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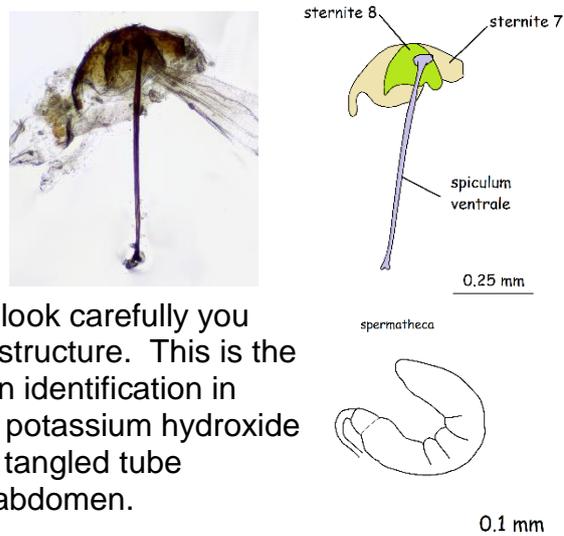
Features of the genitalia

There is no reference in this key about the genitalia which may indicate that they are uniform in this genus. In case there may be specific differences, I present the main features of the structures concerned, using *Protapion trifolii* as an exemplar.

To see these features remove the abdomen and place in near boiling 10% potassium hydroxide solution for ten minutes or overnight in cold solution. Place on a microscope slide and absorb the solution with an absorbent tissue. Add distilled water and leave for ten minutes. Soak up the water and add acetic acid. Leave for ten minutes and then soak up and add distilled water. Finally soak up the water and add glycerine. At any point in this process the abdomen can be broken open using two pins, tearing it along the top surface.

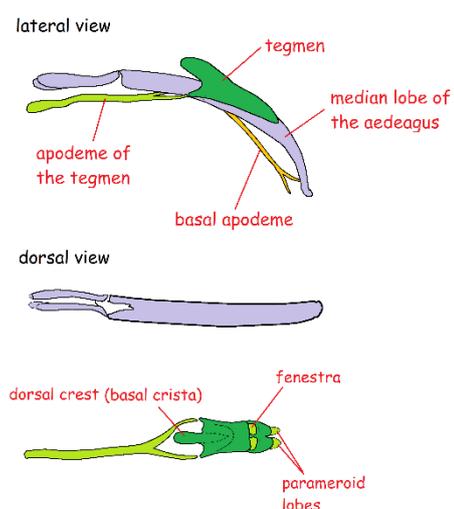
Female genitalia

In females what you will see is a thin rod, about half a millimetre in length extending forwards in the abdomen. This is the speculum ventrale. If this is carefully removed it will come away with the last couple of sternites (lower sections of the 7th and 8th segments of the abdomen). These will be roughly triangular. I'm guessing there may be some variation in these. If you look carefully you will find one further black horseshoe-shaped structure. This is the spermatheca and variations in this are used in identification in other groups of beetles. If treatment with the potassium hydroxide is incomplete, there may be a long section of tangled tube attaching the spermatheca to the rear of the abdomen.

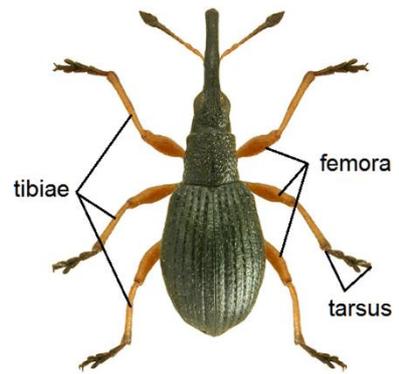


Male genitalia

In males the structure is smaller but more complex. Once removed it will lie on the side and be curved. It consists of a curved section, the aedeagus proper, ending with two appendages. This passes through a second section, the tegmen which is attached to a Y-shaped apodeme. Finally there is a third piece which is more weakly linked to the rest which is the Y-shaped basal apodeme. The tegmen is raised on top into a crest; at one end are two clearer translucent patches termed fenestrae and two lobes at the end, the parameroid lobes. Just behind each fenestra is a row of four tiny punctures.



1 All femora and tibiae pale orange-brown; tarsi more or less black.2



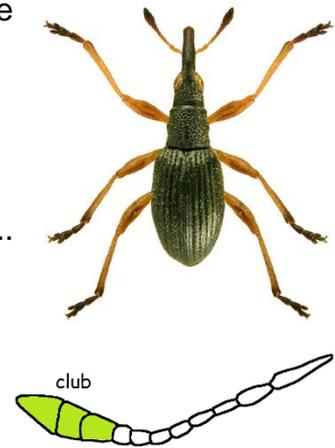
At least the middle and hind tibiae are completely or partly black.3



- 2 Larger, more elongate-oval species. The segments of the antennae become generally broader towards the club, meaning the club itself is not as clearly differentiated. Funicle only yellow at the base. Tip of the rostrum only yellow in males in exceptional cases. Pronotum larger, densely and strongly punctured with a distinct middle furrow towards the rear. Length 1.8-2.2 mm.

..... ***Protapion fulvipes***

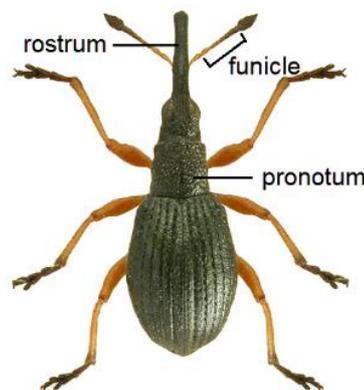
In Central Europe, oligophagous as adults on *Trifolium* species but with larvae developing in the flower heads of *Trifolium repens*, *T. hybridum* and *T. spadiceum*. Common and widely distributed in Britain.



Smaller species with the elytra more shortly oval. Antennal funicle not broadening towards the club and yellow including the last two segments. Hind coxae and often the first segment of the tarsi (also the apical half of the rostrum in males) yellow. Pronotum finely and densely punctured with an indistinct median furrow. Length 1.6-1.9 mm.

..... ***Protapion nigrirtarse***

Fairly common in England and Wales – the NBN site shows records of this species are about a quarter of those for *fulvipes*. In Central Europe found on *Trifolium campestre*, *T. dubium* and *T. aureum* with the larvae developing in the flower heads.



3 Front coxae blackish-brown to black.4

Front coxae yellow, yellowish-red or reddish-brown, viewed from the front, sometimes with a darker border.5



- 4 Larger species, 2.4-3.0 mm. All femora yellowish-red or only black at their extreme tips. Scape of the antennae as long as the first three segments of the funicle combined. Pronotum rather longer than wide with dense to very dense, strong punctures and with a long median furrow. Elytra elongate oval. Male: scape, funicle, front tibiae and part of the middle and hind tibia yellowish red; scape of the antennae broadened towards the tip, club-like; segments of the funicle dorso-ventrally compressed with the second and third segments noticeably enlarged, almost broader than the club; antennal club with the segments rather loosely attached; front tibiae with an s-shaped curve; first segment of the front tarsi with a very long and broad hooked process at the tip on their inner margin; hind tibiae and hind tarsi noticeably dilated. Female: antennae and tibiae completely black or with the tibiae partly paler.



..... ***Protapion difforme***

Locally common in southern England in damp grassland and marshes.

Smaller species, 1.5-2.3 mm. Antennae and all legs black (sometimes the front femora are weakly paler towards the tip). Pronotum as long as wide or slightly wider with strong and moderately dense punctures and with a short median furrow in front of the scutellum. Elytra fairly shortly oval. Rostrum curved, rather narrowing between the point of insertion of the antennae and the tip. Males without the peculiarities mentioned above.



..... ***Protapion filirostre***

Local in southern England. On species of *Medicago* with the larvae developing in galls in the stalks and flower heads.



5 Middle and hind tibiae two-coloured with the basal third to half yellowish-red and the apical section clearly contrasting black to dark brown.6

Middle and hind tibiae uniformly brown or black; sometimes they are somewhat paler towards the base but they are always darker than the femora.8



6 Trochanters of the middle and hind legs dark brown to black. Head and pronotum appearing shiny. Pronotum finely but not particularly densely punctured with the gaps between the punctures greater than their diameter. Frons with a fine longitudinal median furrow and often with fine side furrows. Pronotum shorter than wide with a fine longitudinal furrow towards the rear. Elytra elongate-oval with a weak metallic sheen. Length 2.4-2.9 mm.

..... ***Protapion laevicolle***

On *Trifolium repens*. Southern counties of England, mostly on the coast.



Trochanters of the middle and hind legs yellowish red. Head and pronotum with strong and dense punctures with those on the pronotum with the gaps between them narrower than the diameter of the punctures. Frons without a longitudinal furrow. Rostrum clearly curved.7



- 7 Elytra elongate-oval with strong striae with narrow intervals between them. Antennal scape shorter than the first two segments of the funicle combined. Pronotum comparatively narrow, rather longer than wide with the sides somewhat rounded in the middle section and slightly concave towards the front and rear; distinct median furrow present towards the rear. Rostrum strongly curved, in females almost in a quarter circle. Male: front tibiae broadened towards the tip and curved inwards; base of the antennae and the first segment of the tarsi often paler. Length 2.2-2.6 mm.



..... ***Protapion varipes***

Locally abundant in the southern half of England. Confirmed from *Trifolium pratense*, but found on other species on the Continent (*alpestre*, *arvense*, *montanum*) with the larvae developing in the flower heads.

Elytra more shortly-oval with finer striae and comparatively broader intervals between them. Antennal scape as long as the first three (females) or four (males) segments of the funicle combined. Pronotum as long as wide with the sides almost straight and with a very fine median furrow. Rostrum only moderately curved. Males: first segment of the antennae yellow, clubbed and dilated; segments five and six of the funicle elongate; head with an even impression on the frons which is bordered by a U-shaped ridge at the front; first and second segments of the front tarsi flat and broad, with a tooth at the tip of the first segment and the base of the second; hind tibiae broad and curved; first and second segments of the hind tarsi strongly dilated; hind coxae with a large tooth which is directed downwards. Length 1.8-2.3 mm.



male



female

..... ***Protapion dissimile***

Local and not common but widely distributed. Associated with *Trifolium arvense* with larvae developing in the flower heads. Males are found much less frequently than females as they have a shorter lifespan.



8 Middle and hind trochanters clearly darkened or black, darker than their corresponding femora; sometimes the front coxae have a darkened border or the front tibiae are dark brown. Small species, 1.7-2.1 mm with a weakly curved rostrum.9

Middle and hind trochanters yellowish-red like the femora.11



- 9 Smaller species, 1.7-2.1 mm. Associated with *Trifolium* species. Antennal scape (first segment) relatively shorter and thicker and antennae rather darker.10

Larger species, 2.3-2.9. Associated with *Ononis* species. Pronotum a little longer than its width at the base and with a clear longitudinal furrow. Rostrum comparatively more curved. Antennae rather paler in colour with the hairs spreading and rather scruffy-looking.

..... ***Protapion ononidis***

Widely distributed and locally abundant on both British species of *Ononis* with the larvae developing in the fruits. Because the host species are more frequent near the coast, the beetle is as well. See further characters at couplet 12. The middle trochanters are usually pale but individuals do turn up from time to time with dark ones.



These two species differ from the others in the genus with dark tibiae in having a relatively shorter and thicker antennal scapes and darker antennae

- 10 Pronotum as long as or rather longer than wide, somewhat shining with the distance between the punctures at least as great as the diameter of the punctures. Pronotum with the longitudinal furrow only just indicated immediately in front of the scutellum. Male: fifth segment of the antennae elongate, as long as segments three and four combined. Female: rostrum not longer than the head and pronotum combined. Length 1.7-2.1 mm.

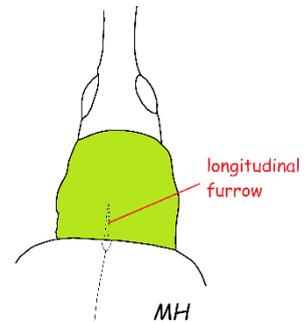
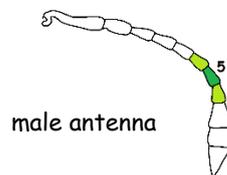
..... ***Protapion schoenherri***

Very local and scarce. In Central Europe adults collected from *Trifolium arvense* and *T. dubium*, but host associations in Britain are not known. In grassy places with a preference to coastal habitats.

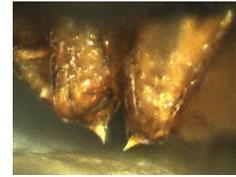
Pronotum as long as its width at the base, with denser and stronger punctures; the distance between the punctures is smaller than the diameter of the punctures; pronotum dull with the longitudinal furrow in front of the scutellum distinct. Male: fifth segment of the antennal funicle not elongate and as long as the segments each side of it (that's the 7th segment). Female: rostrum 1.25 times as long as the head and pronotum combined. Length 1.7-2.1 mm.

..... ***Protapion trifolii***

In Britain on *T. pratense* and *T. medium*. Widely distributed and abundant and may be a pest of cultivated clover. The larvae develop in the flowers.



- 11 Antennal funicle with erect bristles. Pronotum strongly and very densely punctured, with the narrow gaps between the punctures merging in places to form elongate ridges. Elytra elongate-oval. Males with a fine downwardly-directed hair-tuft pointing obliquely towards the middle on the front and middle coxae, or the front tibiae clearly toothed.12
 Other authors have described these tufts as thorns or teeth.



Antennal funicle with the bristles almost lying on the surface. Punctures of the pronotum less dense with most of the gaps smaller than the diameter of the punctures and with these gaps flat with a clear shagreened texture even amongst the denser punctures. Males without hair tufts on the front and middle coxae. Length 2.2-2.7 mm.

..... ***Protapion apricans***

Abundant and widely distributed in Britain on red clover (*Trifolium pratense*), often a pest as it arrests seed formation; larvae develop in the flowers.



- 12 Larger species, 2.3-2.9 mm. Antennal scape longer than the first two segments of the funicle combined. Antennae with noticeably long bristles with the base of the antennae almost always substantially paler. Male: rostrum thickened in the basal half, clearly narrowing from the point of insertion of the antennae to the tip. Female: rostrum rather broader in the rear part than the front.

..... ***Protapion ononidis***

Widely distributed and locally abundant on both British species of *Ononis* with the larvae developing in the fruits. Because the host species are more frequent near the coast, the beetle is as well.



Smaller species, 1.7-2.1 mm. Antennal scape only as long as the first two segments of the funicle combined. Bristles of the antennae shorter and inconspicuous with the base of the antennae usually darkened (especially in females). Male: rostrum parallel sided up to the point of insertion of the antennae and then only slightly narrowing to the tip. Female: rostrum with weakly concavely curved sides in the front half.

..... ***Protapion assimile***

Abundant and widely distributed, oligophagous on species of *Trifolium* with larval development in the flower heads.

