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EDITED BY

WALTER E. COLLINGE, D.Sc. (St. And.) M.Sc. (Birm.),  
F.L.S., F.E.S.,

*Research Fellow of the University of St. Andrews :*

*Carnegie Fellow, 1916-1917 :*

*Foreign Member of the American Association of Economic Entomologists ;*

*Honorary Fellow of the Royal Horticultural Society ; late*

*Lecturer in Zoology and Comparative Anatomy*

*in the University of Birmingham.*

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ON AN APPARENTLY UNDESCRIBED ENGLISH SALTA-  
TORIAL MITE (*SPELEORCHESTES PODUROIDES*, N.SP.)  
belonging to the family Eupodidae (Prostigmata).

By **STANLEY HIRST.**

WITH 4 TEXT-FIGURES.

THE minute Acarus described below was collected by the author during a brief visit to the Malvern Hills early in May in the present year. Numerous examples were found on the under surface of a stone on the western slope of the hills near the summit of the Worcester Beacon. The mite runs quite quickly, and, when molested, also exhibits considerable powers of jumping. It belongs to the genus *Speleorchestes*, Trgdh., and is evidently closely allied to the two species which are already known (*S. formicorum*, Trgdh., 1910, described from two specimens found in a nest of *Formica rufa*, not far from the shore at Arilds läge, Sweden, and *S. termitophilus*, Trgdh., 1910, discovered in a partly deserted termites nest in Zululand). There were no ants under the particular stone under which *S. poduroides*, n.sp., was found. Another very similar species of jumping mite (*Nanorchestes amphibius*, Tps. and Trt., 1890) occurs at Luc-sur-Mer, (Calvados), France, living in crevices of the rocks on the sea shore (within the limits of the tide). The specific name *poduroides* has been given to this new mite on account of its close resemblance, both in general appearance and behaviour, to an insect of the family Poduridae. The accompanying drawings have been carefully prepared by Mr. Percy Highley with the aid of a camera lucida.

***Speleorchestes poduroides*, n.sp.**

Figs. 1-3.

♀. Closely allied to *S. formicorum*, Trgdh., but apparently differing from that species in the number and relative length of the shorter plumose hairs on the anterior part of the cephalothorax. Body elongated, being very like that of *S. formicorum* in shape. When viewed from above, the anterior part of the cephalothorax (bearing the chelicerae, palpi, and first two pairs of legs) is seen to be a little wider than long and separated from the rest of the body by a deep transverse constriction; posterior part of cephalothorax (bearing the last two pairs of legs) much larger than the anterior and considerably wider than long; it forms a distinct segment, being separated from the abdomen by a second deep transverse

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constriction. Abdomen large, being elongated and sac-shaped; there is a slight transverse furrow near its anterior end. Two pairs of very long and fine setae (pseudostigmata), which are delicately feathered, are

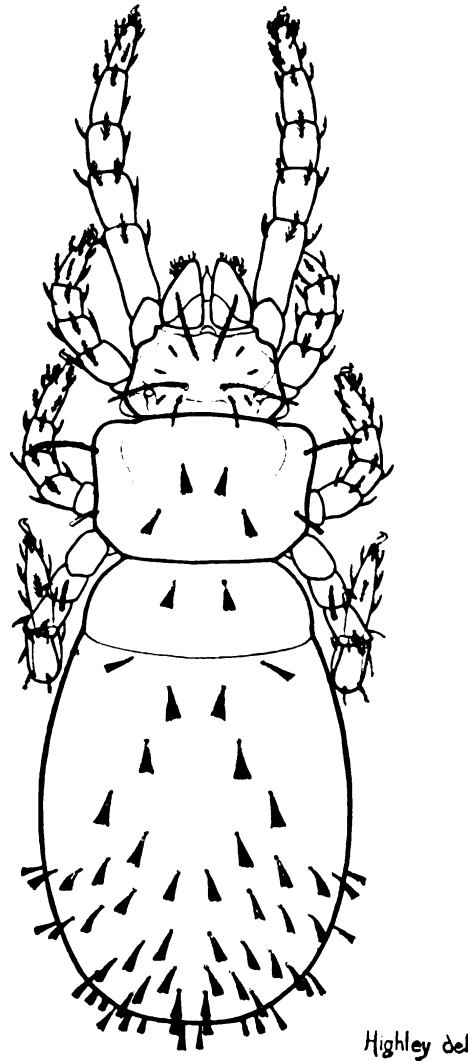


Fig. 1. Dorsal view of *Speleorchestes poduroides*, Hirst.

to be found on the dorsal surface of the anterior part of the cephalothorax in much the same position as in *S. formicorum*; those of the posterior pair are placed further back, however, being situated nearer the deep transverse furrow. There are also four pairs of shorter plu-

mose hairs arranged as shown in the accompanying figure, those of the posterior pair being considerably longer than the three others. Eye very minute, but rounded and somewhat salient. A little projection is present in the middle of the anterior margin as in *S. formicorum*. Hairs on body densely plumose, being furnished with numerous short accessory hairs; some of the lateral hairs on the body are shaped very like the one figured by Trägaerth, but most of the dorsal hairs of *S. poduroides* are much less elongated, the slender basal portion being very short, for the hairs begin to widen almost at once; the distal end, which is truncated, is rather wider than in his figure. The second part of the

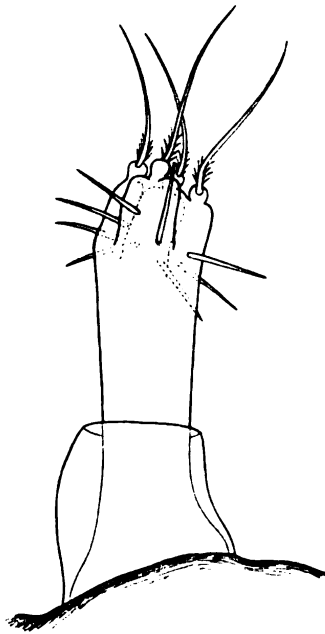


Fig. 2. Extruded ovipositor of *Spalorchastes poduroides*, Hirst.

cephalothorax has an exceptionally long and slender hair on each side near its anterior end. Genital aperture rather large, and provided with three pairs of oval suckers, the posterior pair being smaller than the others. Ovipositor of considerable size; when extruded it is seen to consist of two portions: (1) a rather short but wide sheath or collar which encircles the base of the real protusible organ (2). The ovipositor itself, which is fairly long and of moderate width, and ends in four short lobes or processes; each of these processes is truncated distally and bears a minute cone or papule; there is a pair of short plain hairs at the base of each process, and the minute terminal cones each bear a longer hair, the basal portion of which is plumose (Fig. 2). Chelicerae a little

♀

shorter than the first part of the cephalothorax. They are of the usual chelate type, both fingers being distinct; the immovable one is curved, the movable one seems more strongly chitinised and straighter; both of these fingers bear a delicate lamina, but it is difficult to see the exact shape of these structures owing to their minute size and transparent nature.

Two short hairs are present on the dorsal surface of the chelicerae,

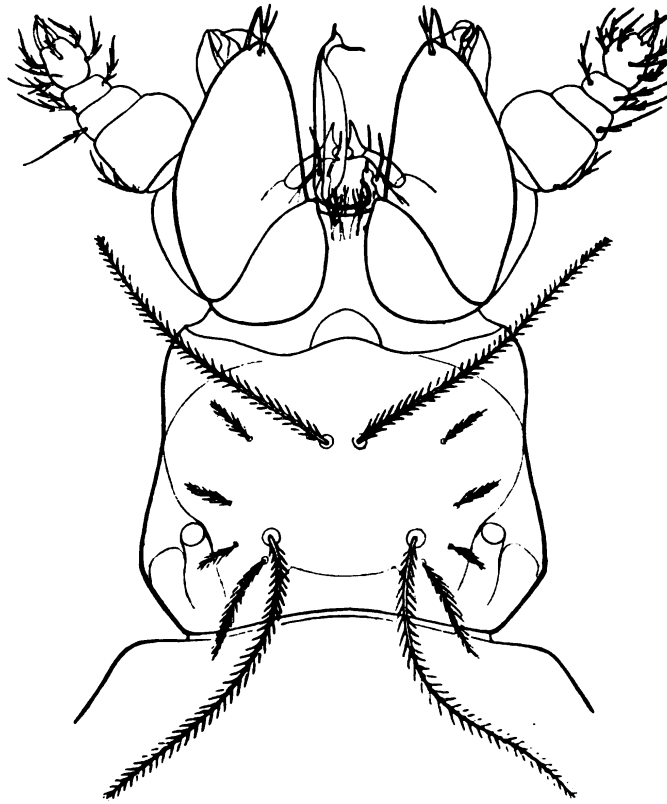


Fig. 3. Chelicerae, palps, and anterior end of cephalothorax of *Speleorchestes poduroides*, Hirst, from above.

near the point of origin of the immovable finger, one of them being distinctly feathered. There is a curious curved median structure between the chelicerae, as in *S. formicorum*. The pair of organs called by Trägaerth the lateral appendages of the maxillae are also present in this species; each consists of a straight rod, which is jointed in two places, and bears tooth-like processes at the end. One or two small lobes bearing plumose hairs can also be distinguished, and a short peg-

shaped process is present in the median line ventrally.. *Palp* consisting of five free segments (but it is possible that there is yet another proximal segment). First segment small and annular; second high, fairly long, and with a feathered hair on its dorsal surface; third segment high, but short, and with a slightly feathered dorsal hair; fourth not so high, but a little longer than the third, and with three slightly feathered hairs; tarsus shaped rather like that of *S. formicorum*, and furnished with eight short hairs, two terminal ones being stiff, blunt, and rod-like, the others fine and slightly feathered.

*Legs.*—First and fourth legs equal in length, the former being the stouter; second and third legs much shorter. All the legs consist of seven segments, the two proximal ones being very short and inconspicuous; coxa of fourth leg not enlarged, but it is connected internally with a large triangular bundle of muscle fibres (the appearances called epimera by Trägäerth seem to me to be merely folds of the skin). Each leg ends in a single claw fringed with very minute hairs. There are several (about six) short, stiff, blunt, rod-like hairs at the end of the tarsus of the first leg; apparently these are the only plain hairs on the legs, all the others being distinctly feathered; all the hairs on the legs are quite short, but one on the third segment of the last leg is longer than the others.

*Colour*, pale red.

*Length* of body, 249  $\mu$ ; of body + chelicerae, 278  $\mu$ . *Width* of anterior part of cephalothorax, 58  $\mu$ ; of posterior part of same, 82  $\mu$ ; of abdomen, 106  $\mu$ .

Since the above description of a new *Speleorchestes* was written, I have succeeded in collecting English specimens of *Nanorchestes amphibius*, Tops. and Trouess. (hitherto only known to occur in France), and take the opportunity of adding a brief description of that interesting species.

#### ***Nanorchestes amphibius*, Tops. & Trouess.**

##### **Fig. 4.**

In general appearance this mite differs greatly from the species of *Speleorchestes*, for it is a squat form, being much less elongated and fairly wide as compared with its length. Body oval or rather sac-shaped, and there is a distinct transverse constriction some distance behind the anterior end of the abdomen. Shoulders of abdomen massive, having a rather squarish appearance, as in *Trombidium holosericeum*, and they enclose the cephalothorax for nearly its entire length. Cephalothorax comparatively narrow and shaped as figured.

A sharply pointed little triangular process, which is transversely

striated like the rest of the cephalothorax, is present in the middle of the anterior margin, projecting forwards between the chelicerae; it is continued forwards by a much larger triangular process, apparently

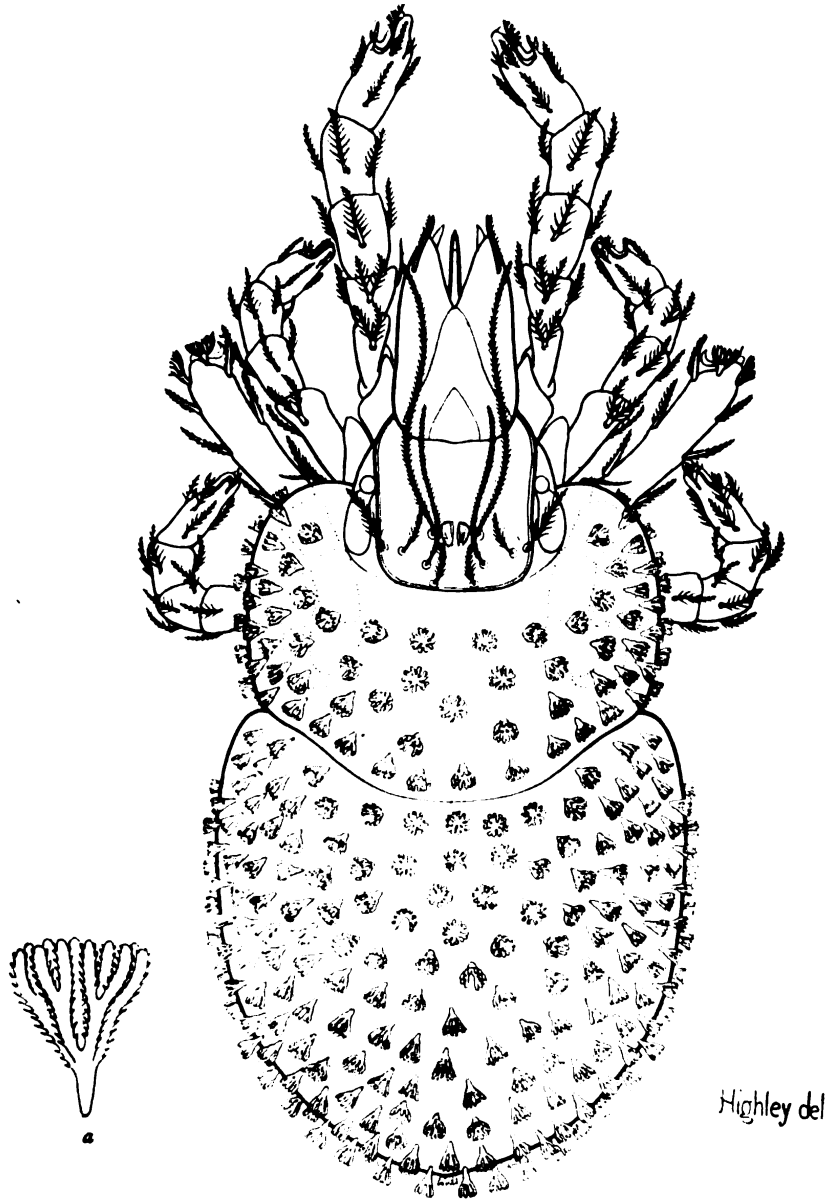


Fig. 4. *Nanorchestes amphibius*, Tops. and Trouess. Dorsal aspect of female.  
a. Hair on abdomen, greatly magnified.



formed by the fused basal segment of the chelicerae. Eyes minute, but distinct, and placed at the anterior end of an oval sac-shaped structure. There are five pairs of plumose hairs on the dorsal surface of the cephalothorax, including an exceedingly long and slender pair (pseudostigmata), situated near the middle line (at about a third of the length of the cephalothorax from its posterior end), and another pair of fairly long hairs placed quite close to the posterior margin; the other hairs on the cephalothorax are shorter in length. There is also a pair of minute scale-like elevations between the anterior pair of pseudostigmata, but it is possible that they are merely ridges of the integument. Hairs on abdomen very peculiar in structure; they are quite short, and shaped rather like a wine glass, consisting of a short stem and an expanded cup-like distal portion, formed by a number of branched hairs arranged in a circle. If greatly magnified these branched hairs will be seen to be beset with numerous very short secondary hairs (see Fig. 4a). Chelicerae fairly large and elongated, and apparently very like those of *Speleorchestes* in structure, one finger being fairly strong, but the other weak and lobate. A plumose hair is present near the distal end of the dorsal surface of the chelicera. There is a strongly chitinised curved structure between the chelicerae of much the same type as in *Speleorchestes*. Owing to the small number of specimens in my possession I am unable to give further details of the structure of the mouth parts. Palp very like that of *Speleorchestes* in general appearance, being composed of five segments, the second one being very high, as in *S. poduroides*, whilst the tarsal segment is quite small.

*Legs.*—The structure of the legs is difficult to make out, as the specimens are somewhat damaged. The first and fourth legs are fairly long. Tarsus of first leg more strongly hollowed out at the end dorsally than is the case in the other legs, and furnished with a stiff rod-like hair or seta, which differs from the other hairs in not being feathered. Basal segment of fourth leg inserted into a very large, slightly elevated area of the integument; the inner border of this area being practically straight, and only separated from that of the other side by a narrow groove in the median line. This structure, in fact, is very like an epimeron (or basal segment of a leg), but it is improbable that it really forms part of the limb. Large bands of muscle fibres are present internally beneath this area, so there can be little doubt that it is the third and fourth legs that are used by the mite whilst jumping.

Several large hairs are present on this part of the venter, and they are branched in a peculiar way, spreading out near the base into several main branches which bear a number of shorter branches. Tarsus of fourth leg furnished with several stout and slightly curved hairs, which

may perhaps serve as springs; the claw of this leg is very slender except at the base, where it is rather stout.

*Colour.*—Body dark brown, except the anterior end, which is reddish in living specimens.

*Measurements in mm.*—Length of body (incl. chelicerae), 270  $\mu$ ; width, 132  $\mu$ .

*Habitat.*—St. Catherine's Point, Isle of Wight; four specimens found by the author under stones on the sea shore, just above high-water mark (July 22nd, 1917). This species can jump a considerable distance, but does not run very quickly.