

NEW SPECIES OF GONIODES.

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Goniodes picta n. sp.

(Figures 1-3)

Female: Head circumfasciate; clypeal margin broadly rounded with prominent angles. Temples angular with latero-ventral processes, each bearing one long seta and one short seta. Head wider than long, greatest width at the slightly expanded temples. Prothorax short and narrow. Pterothorax short and wide, without lateral indications of meso-metathoracic junctions. Dorsal chaetotaxy of the head and thorax shown in figure 1a. Legs characteristic of the genus. Abdomen large and elongate. Abdominal chaetotaxy as follows:

Segment	Tergites	Sternites	Pleurites
I	2-4-2	0	2
II	2-4-2	3	2
III	2-4-2	3	2
IV	2-6-2	3	3
V	2-4-2	3	4
VI	1-2-1	2	4
VII	1-2-1	2	3

Genital region as shown in figure 3a. Vulva with short marginal setae and with concentrations of setae at each posterolateral angle. Spinous processes absent.

Male: Head and thorax shown in figure 1b. Abdomen shorter and more rounded than in female. Abdominal chaetotaxy as follows:

Segment	Tergites	Sternites	Pleurites
I	5-2-5	2	2
II	2-2-2	2	2
III	2-4-2	2	3
IV	2-2-2	2	3
V	2-2-2	2	4
VI	3-2-2	2	4
VII	3-2-3	2	3

Genitalia (figure 2) distinctive and prominent. Chaetotaxy of terminal segments shown in figure 3b.

Holotype male, allotype female and paratypes from *Oreortyx picta picta* (Douglas), Plumed Mountain Quail, collected on the Hastings Reserve, California, by Dr. Oliver B. Cope.

Goniodes submamillatus n. sp.

(Figures 4-6)

Female: Head circumfasciate; clypeal margin broadly rounded with prominent angles. Head almost as long as wide. Temples slightly wider than preantennal region of head. Prothorax short and narrow. Pterothorax short and wide, without lateral indications of meso-metathoracic junctions. Dorsal chaetotaxy of head and thorax shown in figure 4a. Legs characteristic of the genus. Abdomen large and elongate. Abdominal chaetotaxy as follows:

Segment	Tergites	Sternites	Pleurites
I	1-4-1	2	1
II	2-2-2	2	3
III	2-6-2	2	3
IV	2-4-2	2	4
V	2-4-2	2	4
VI	2-4-2	2	4
VII	2-2-2	2	4

Genital region shown in figure 6a. Vulva with marginal setae but without concentrations of setae at the posterolateral angles. Spinous processes absent.

Male: Head and thorax shown in figure 4b. Abdomen shorter and more rounded than in female. Abdominal chaetotaxy as follows:

Segment	Tergites	Sternites	Pleurites
I	2-2-2	2	2
II	2-2-2	2	3
III	2-2-2	2	3
IV	2-2-2	2	3
V	2-2-2	2	3
VI	2-2-2	2	3
VII	2-2-2	2	3

Genitalia (figure 5) easily distinguishes this form from all other known species. Chaetotaxy of terminal segments of abdomen shown in figure 6b.

Holotype male, allotype female and paratypes from *Cyrtonyx montezumae mearnsi* Nelson, Mearns's Quail; collected by Dr. D. M. Gorsuch in Florida Canyon of the Santa Rita Mountains, Ariz.

Goniodes squamatus n. sp.

(Figures 7-9)

Female: Head circumfasciate; clypeal margin broadly rounded with prominent angles. Clypeal band narrow. Head wider than long, greatest width at the slightly expanded temples. Antennae filiform. Prothorax short and narrow with one long seta in each posterolateral angle. Pterothorax short and wide, almost triangular in shape. Legs normal for the genus. Abdomen large and oval-shaped. Vulva with marginal setae and without concentrations of setae at the posterolateral angles. Spinous processes absent. Dorsal and ventral chaetotaxy shown in figure 7.

Male: Head as wide as long; greatest width in the preantennal region. Clypeal margin broadly rounded with prominent angles. First three antennal segments enlarged. Prothorax and pterothorax as in the female. Abdomen shorter and more rounded than in the female. Genital opening with a marginal row of setae. Dorsal and ventral chaetotaxy shown in figure 8. Genitalia shown in figure 9.

Holotype male, allotype female and paratypes from *Callipepla squamata pallida* Brewster, Arizona Scaled Partridge; collected by J. L. Greenwald at Albuquerque, New Mexico. Paratypes also from the same host collected at Sheffield and Fort Stockton, Texas.

Discussion.

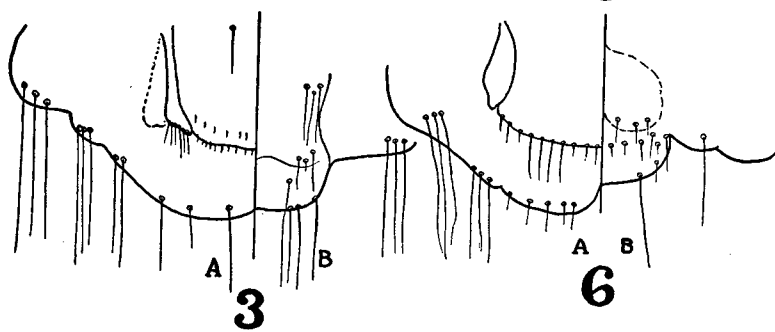
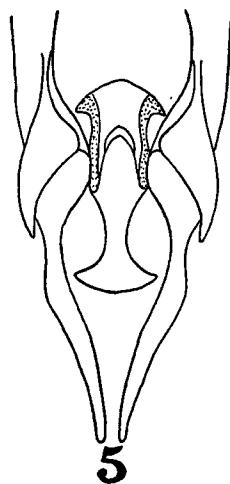
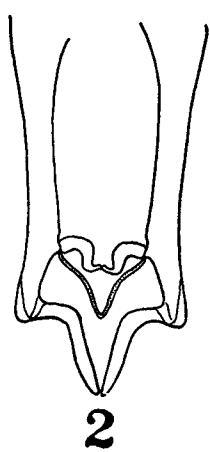
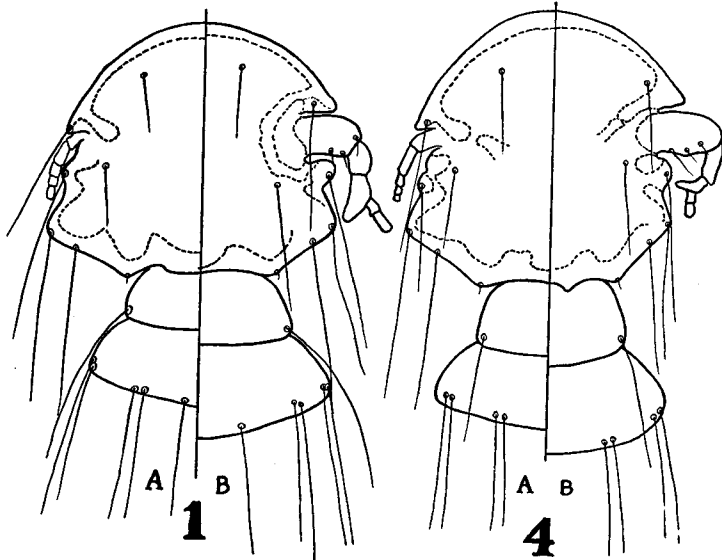
The male genitalia of the various species differ greatly and offer the best means of identification. The females are not easily separated; however, it is believed that the following key will aid in their classification.

- | | |
|--|-------------------|
| 1. Meso- and metasternal setae present. | pavonis |
| Without meso- and metasternal setae. | 2 |
| 2. Sternal plates on abdominal segments II-VI divided into two parts on each side. | gigas |
| Sternal plates on abdominal segments undivided. | 3 |
| 3. Posterior margin of the vulva with five lobes. | dissimilis |
| Posterior margin of the vulva with not more than three lobes. | 4 |

EXPLANATION OF PLATES

Plate I.

- Figures 1-3 refer to *Goniodes picta* n. sp.
 1a. Dorsal view of the female head and thorax.
 1b. Dorsal view of the male head and thorax.
 2. Male genitalia.
 3a. Ventral view of the female genital region.
 3b. Dorsal view of the male genital region.
 Figures 4-6 refer to *Goniodes submamillatus* n. sp.
 4a. Dorsal view of the female head and thorax.
 4b. Dorsal view of the male head and thorax.
 5. Male genitalia.
 6a. Ventral view of the female genital region.
 6b. Ventral view of the male genital region.



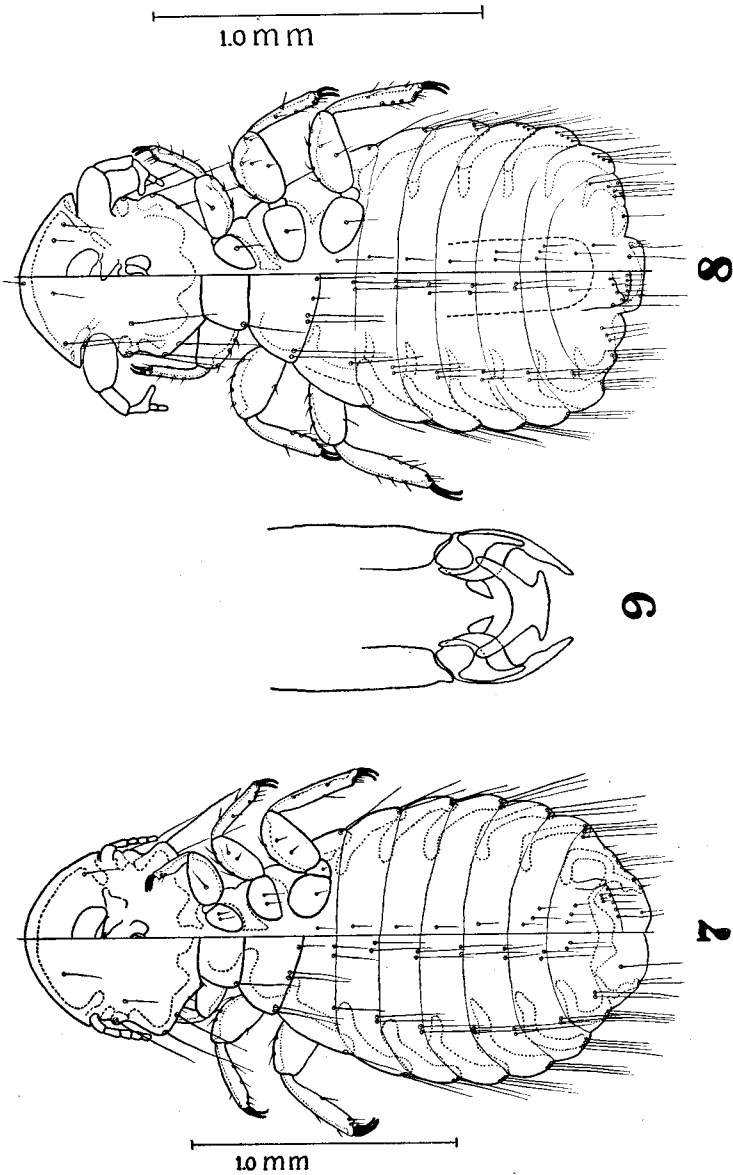


Plate II.

Figures 7-9 refer to *Goniodes squamatus* n. sp.

7. Dorsal-ventral view of the female.

8. Dorsal-ventral view of the male

9. Male genitalia.

- | | |
|---|----------------------|
| 4. Concentration of setae at the posterolateral angles of the vulva. | 8 |
| No concentration of setae at the posterolateral angles of the vulva. | 5 |
| 5. Spinous processes near the posterolateral angles of the vulva. | 6 |
| No spinous processes near the vulva. | 7 |
| 6. Vulva with two long setae. | ortygis |
| Vulva with four long setae. | mamillatus |
| 7. Second antennal segment as long as the combined length of the third, fourth and fifth. | submamillatus |
| Second antennal segment only slightly longer than the third or fourth or fifth. | squamatus |
| 8. Spinous processes near the posterolateral angles of the vulva. | picta |
| No spinous processes near the vulva. | 9 |
| 9. Setae on the posterior margin of the vulva. | cupido |
| Posterior margin of the vulva without setae. | 10 |
| 10. Spinous processes near the vulva, straight and extremely small. | centrocerci |
| Spinous processes near the vulva, large or normal sized and curved. | 11 |
| 11. Dorsal chaetotaxy of the first abdominal segment, 2-6-2. | 12 |
| Dorsal chaetotaxy of the first abdominal segment, 2-8-2. | 15 |
| Dorsal chaetotaxy of the first abdominal segment, 1-6-1. | bonusus |
| 12. Lateral margins of the vulva long, straight and parallel to the sides of the abdomen. | merriamianus |
| Lateral margins of the vulva short and irregular in shape. | 13 |
| 13. Dorsal chaetotaxy of second and third abdominal segments, 2-8-2. | 14 |
| Dorsal chaetotaxy of second and third abdominal segments, 2-6-2. | nebraskensis |
| 14. Total length of female about 2.5 mm. | corpulentus |
| Total length of female more than 3.0 mm. | dispar |
| 15. 7 to 10 setae in the concentration at each posterolateral angle of the vulva. | lagopi |
| 12 to 15 setae in the concentration at each posterolateral angle of the vulva. | colchicus |

Host List.

Material has been examined from the Hungarian Partridge, the Ring-necked Pheasant, the domestic fowls, and all native species of gallinaceous birds. The following list includes all species of this genus normally found in the United States, Canada, and Alaska, together with their normal hosts.

Goniodes bonusus Emerson 1943. **Bonasa umbellus** subspecies, Ruffed Grouses.

Goniodes centrocerci Simon 1938. **Centrocercus urophasianus** (Bonaparte), Sage Hen.

Goniodes colchici Denny 1842. **Phasianus colchicus torquatus** Gmelin, Ring-necked Pheasant.

Goniodes corpulentus Kellogg and Mann 1912. **Canachites canadensis** subspecies, Spruce Grouses; and **Canachites franklinii** (Douglas), Franklin's Grouse.

Goniodes cupido Rudow 1870. **Tympanuchus cupido** subspecies,

Prairie Hens and *Tympanuchus pallidicinctus* (Ridgway), Lesser Prairie Hen.

Goniodes dispar Burmeister 1838. *Perdix perdix perdix* (Linnaeus), Hungarian Partridge.

Goniodes dissimilis Denny 1842. Domestic chickens.

Goniodes gigas (Taschenberg 1879). Domestic chickens and Guinea fowls.

Goniodes lagopi (Linnaeus 1758). *Lagopus lagopus* subspecies, Willow Ptarmigans; *Lagopus mutus* subspecies, Rock Ptarmigans; and *Lagopus leucurus* subspecies, White-tailed Ptarmigans.

Goniodes mamillatus Rudow 1870. *Lophortyx californica* subspecies, Valley Quails; and *Lophortyx gambelii* subspecies, Gambel's Quails.

Goniodes merriamanus Packard 1873. *Dendragapus obscurus* subspecies, Dusky Grouses.

Goniodes nebraskensis Carriker 1946. *Pediocetes phasianellus* subspecies, Sharp-tailed Grouses.

Goniodes ortygis Denny 1842. *Colinus virginianus* subspecies, Bobwhites.

Goniodes pavonis (Linnaeus 1758). Domestic Peafowls.

Goniodes picta n. sp.. *Oreortyx picta* subspecies, Mountain Quails.

Goniodes squamatus n. sp.. *Callipepla squamata* subspecies, Scaled Quails.

Goniodes submamillatus n. sp.. *Cyrtonyx montezumae mearnsi* Nelson, Mearns's Quail.

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