

New Trechine Beetles (Coleoptera: Carabidae) from the Appalachian Region

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ABSTRACT.— New taxa of *Pseudanopthalmus* from caves in south-central Kentucky are described and illustrated: *P. menetriesi campestris*, *P. simulans*, *pilosus*, *globiceps*, *transfluvialis*, *cerberus cerberus*, *cerberus completus*, *darlingtoni darlingtoni*, *darlingtoni persimilis*, and *pubescens intrepidus*. Two new species of *Trechus*—*T. (Trechus) caliginis* and *T. (Microtrechus) inexpectatus*—are described and illustrated from Camp Creek Bald, North Carolina/Tennessee.

The trechines are a group of small carabid beetles that includes many species restricted to cool, moist microhabitats. In the Appalachian region they are abundant in the Unaka mountain province of western North Carolina and adjacent Tennessee as well as in caves of the Appalachian Valley and Interior Low Plateaus (Barr 1979a, 1980, 1981). The following previously undescribed taxa are from both Unaka and Interior Low Plateau regions.

Pseudanopthalmus menetriesi campestris, new subspecies

Fig. 1

Etymology.— Latin *campestris*, "of the plain."

Description.— Differs from nominate *Pseudanopthalmus menetriesi* (Motschulsky) in narrower elytra, L/W for Mammoth Cave $1.56 \pm .04$ (N = 45) and for Walnut Hill Cave (type locality) *campestris* $1.60 \pm .04$ (N = 45, P = .01); humeri less angular, striae deeper, intervals subconvex, pubescence of pronotum and elytral discs relatively dense. Length 4.6 - 5.7, mean 5.0 ± 0.1 mm (N = 65). Aedeagus about as in *P. m. menetriesi*.

Type series.— Holotype male (American Museum of Natural History) and 41 paratypes, Walnut Hill Cave, 3.3 km S Park City, Barren Co., Kentucky (Park City $7\frac{1}{2}'$ Quadrangle), 18 March 1966, T. C. Barr, R. M. Norton, T. G. Marsh. Measurements of holotype (mm): total length 5.20, head 0.90 long X 0.82 wide, pronotum 0.98 long X 1.05 wide, elytra 2.93 long X 1.83 wide, antenna 3.24 long.

Distribution.— This is the geographic race from the Sinkhole Plain south of Mammoth Cave National Park described but not named by Barr and Crowley (1981). It ranges from the vicinity of Hardyville, Hart

County, through Barren County to Smiths Grove and Three Forks in Warren County, Kentucky, hybridizing with nominate *menetriesi* in caves at Park City and Cave City.

Pseudanophthalmus simulans, new species

Fig. 2

Etymology.— Latin *simulans*, "simulating."

Diagnosis.— Closely similar to *menetriesi* but larger, pronotum wider, elytra pubescent over entire disc, elytral chaetotaxy +++, humeri more pronounced, with slight posthumeral sinuation in margin; aedeagus larger than that of *menetriesi*, its apex much wider in dorsal view.

Description.— Length 5.2-6.4, mean 5.8 ± 3.0 (N = 19), larger than *menetriesi* (P = .01). Form robust, convex, pubescent, elytral microsculpture not pruinose. Head as wide as long, labrum doubly emarginate. Pronotum about 0.9 as long as wide, disc pubescent, sides curved in apical 2/3, barely sinuate in basal 1/7, hind angles as in *menetriesi*. Elytra with humeri more prominent, humeral serrations larger and deeper, margin with shallow posthumeral sinuation; disc densely pubescent, posterior discal seta present. Aedeagus as in Figure 2, similar to that of *menetriesi* but significantly larger.

Type series.— Holotype male (American Museum of Natural History) and 17 paratypes, Cub Run Cave, at Cub Run, Hart Co., Kentucky (Cub Run 7½' Quadrangle), 18 November 1964, T. C. Barr, W. M. Andrews; one paratype, same cave, 29 December 1956, L. Hubricht. Measurements of holotype (mm): total length 6.18, head 0.93 long X 0.93 wide, pronotum 1.08 long X 1.18 wide, elytra 3.50 long X 2.17 wide, antenna 3.75 long.

Distribution.— The species is an isolate known only from the type locality. Extrinsic isolation of Cub Run Cave is a reasonable hypothesis, supported by absence of any vicar taxa related to *Neaphaenops tellkampfi* (Erichson), *P. striatus* (Motschulsky), or *P. pubescens* (Horn), which coexist with *P. menetriesi*. By similar reasoning, this species and the next three (described below) are judged to have arisen along with *P. menetriesi* through multiple cave colonization by a common ancestor.

Pseudanophthalmus pilosus, new species

Fig. 3

Etymology.— Latin *pilosus*, "hairy."

Diagnosis.— Closest to *menetriesi*, differing in more convex, vaulted elytra, flat near middle of disc and with abruptly declivous sides; elytral disc uniformly pubescent and not pruinose; 6 discal striae usually deeply impressed and seriate-punctulate, intervals subconvex, discal setae +0+

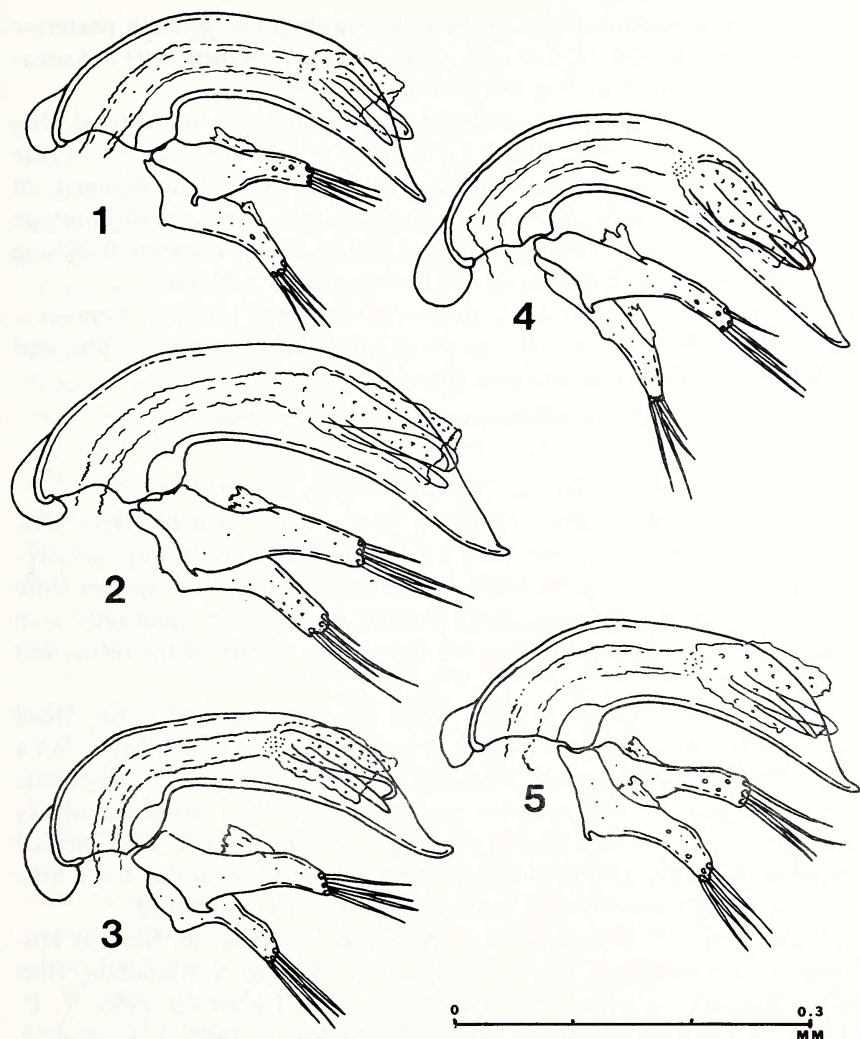


Fig. 1-5. Aedeagi of *Pseudanophthalmus* spp., left lateral view. 1: *menetriesi campestris*, n. subsp. 2: *simulans*, n. sp. 3: *pilosus*, n. sp. 4: *globiceps*, n. sp. 5: *transfluvialis*, n. sp.

in about half the individuals in most populations (except the northernmost, which are +++); pronotum wider (L/W 0.80-0.85); aedeagus straighter in middle portion, apex finely reflexed.

Description.— With the characters of *P. menetriesi* except as noted above. Length 4.4-5.7, mean 5.5 ± 0.3 mm (N = 118). Pronotum disc evidently pubescent, hind angles more consistently sharp, sometimes

with small secondary angles on base. Elytra with one or both posterior discal setae absent in about half of specimens examined (+0+). Aedeagus 0.71-0.80, mean $0.75 \pm .04$ mm long (N = 18).

Type series.— Holotype male (American Museum of Natural History) and 18 paratypes, Bland Cave, 1.8 km NW Spurrier on N side Akers Valley, Hardin Co., Kentucky (Millerstown $7\frac{1}{2}'$ Quadrangle), 28 December 1962, T. C. Barr, R. A. Kuehne. Measurements of holotype (mm): total length 5.52, head 0.93 long X 0.74 wide, pronotum 0.99 long X 1.09 wide, elytra 3.10 long X 2.02 wide, antenna 3.97 long.

Distribution.— Limited to northwestern Hart County, Kentucky, north of the Hart County Ridge, an extrinsic barrier (Barr 1979b), and southwestern Hardin County (to Star Mills).

Pseudanopthalmus globiceps, new species

Fig. 4

Etymology.— Latin *globus*, "round," + *-ceps*, "head."

Diagnosis.— Resembles *pilosus* in very convex, vaulted elytra with dense discal pubescence, but head more rounded and pronotum proportionately wider, base more nearly rectilinear than in other species close to *menetriesi*, barely emarginate behind hind angles; aedeagus with median lobe more strongly arcuate than other species of the *menetriesi* series.

Description.— Length 4.8-5.8, mean 5.3 ± 0.3 mm (N = 10). Head and pronotum as described above. Elytra broad and quite convex but a little less so than in *pilosus*; 6-7 finely impressed and strongly punctulate striae, sutural stria deepest, intervals flat or nearly so, discal chaetotaxy normal (+++); subhumeral margin slightly sinuate, greatest width behind middle. Aedeagus of a paratype 0.73 mm, about as in *pilosus* but a little narrower and more strongly arcuate, apex not briefly reflexed.

Type series.— Holotype male (American Museum of Natural History) and 3 paratypes, Barnes Smith Cave, 5.7 km N Hinesdale, Hart Co., Kentucky (Canmer $7\frac{1}{2}'$ Quadrangle), 30 December 1956, T. C. Barr; 6 additional paratypes, same cave, 30 August 1963, T. C. Barr, J. R. Holsinger; 2 July 1980, T. C. Barr, Jr., T. C. Barr, III. Measurements of holotype (mm): total length 5.84, head 1.05 long X 0.98 wide, pronotum 1.13 long X 1.23 wide, elytra 3.39 long X 2.26 wide, antenna 3.63 long.

Distribution.— Known only from the type locality, a cave at the south base of the Hart County Ridge, where *P. globiceps* coexists with *Neaphaenops tellkampfi* from the Mammoth Cave region and *P. orientalis* Krekeler, from the Greensburg area. There are few other caves in the vicinity; an interaction with *P. menetriesi* is perhaps feasible, although no suitable intervening caves have been sampled. The unusually convex elytra suggest common ancestry with *P. pilosus*, however, not *menetriesi*.

Pseudanopthalmus transfluvialis, new species

Fig. 5

Etymology.— Latin *trans*-, “across,” + *fluvialis*, “pertaining to a river.”

Diagnosis.— Closest to *P. menetriesi* but heavily pubescent, sides of head a little less rounded, pronotum narrower, prehumeral borders less oblique and humeri more prominent, elytral intervals subconvex instead of flat, striae distinctly impressed, disc not pruinose.

Description.— Length 4.6-5.8, mean 5.2 ± 0.3 mm (N = 32). Head about 0.15-0.18 longer than wide. Pronotum about as wide as long, mean L/W $0.96 \pm .03$ (N = 32); disc pubescent, hind angles as in *menetriesi*. Elytra moderately convex (not vaulted as in *pilosus* or *globiceps*, nor flattened as in nominate *menetriesi*), about 1.6 times longer than wide, pubescent; humeri stronger than in *menetriesi* (either subspecies), intervals subconvex, striae deeper, strongly punctured; chaetotaxy normal (+++) and microsculpture not pruinose. Aedeagus 0.67-0.76, mean $0.69 \pm .03$ mm (N = 8), closely similar to that of *menetriesi*.

Type series.— Holotype male (American Museum of Natural History) and 5 paratypes, McGinnis Cave, 4.2 km SW Bowling Green, Warren Co., Kentucky (Bowling Green South $7\frac{1}{2}'$ Quadrangle), 26 September 1949, J. M. Valentine, W. B. Jones, I. C. Royer. Measurements of holotype (mm): total length 5.52, head 1.01 long X 0.86 wide, pronotum 1.09 long X 1.09 wide, elytra 3.16 long X 1.99 wide, antenna 3.43 long, aedeagus 0.76 long.

Distribution.— Described on 43 specimens from the type cave and other caves in Bowling Green (Bypass, Horseshoe, State Trooper); the westernmost limit is Wheeler Cave, 3.3 km northeast of South Union, in eastern Logan County. The species appears to have a range that runs along the base of the Dripping Spring escarpment from Bowling Green to Wheeler Cave; it does not extend south into the range of *P. princeps* (see Barr 1979b), but coexists with *Neaphaenops meridionalis* Barr and *P. loganensis* Barr in all of the caves where it has been collected (Barr 1979b). The trivial name refers to the barrier status of Barren River at Bowling Green, where the river separates *P. menetriesi*, *P. striatus*, *P. pubescens*, and *N. tellkampfi* from *P. transfluvialis*, *P. loganensis*, and *N. meridionalis*.

Pseudanopthalmus cerberus cerberus, new species and subspecies

Fig. 6

Etymology.— Named for Cerberus, the mythical dog guarding the gates of Hades, usually depicted with three or more heads; *P. cerberus* is the most widely distributed of three closely similar species in south-central Kentucky.

Diagnosis.— Similar to *P. menetriesi* in having hind angles of the pronotum tipped forward instead of produced backward (as in *striatus* and *darlingtoni*), differing in impunctate or vaguely punctulate elytral striae, strongly pruinose elytral disc, and more oblique prehumeral borders; elytral chaetotaxy +0+, the posterior discal puncture absent.

Description.— Length 4.6-5.8, mean 5.2 ± 0.3 mm (N = 77). Robust, subconvex, pubescent, elytral apical groove vestigial (diagnostic for *menetriesi* group). Head and mandibles less slender than in *menetriesi*, dorsum subglabrous; labrum with low median lobe. Pronotum 0.83-0.86 as long as wide, widest in apical third, sides rounded apical half then convergent to small, approximately right, sharp, and reflexed hind angles; anterior angles prominent, base 0.75 maximum width, apex 0.87 as wide as base; small secondary angles of base internal to very deep, oblique, basolateral impressions; median antebasal impression quite deep and linear; disc convex, with long, rather sparse pubescence; anterior marginal setae placed before greatest width, posterior marginals before hind angles. Elytra elongate-oval, 0.55-0.64 longer than wide; humeri prominent, setose with moderately coarse serrations, prehumeral borders oblique to mid-line; disc densely pubescent and strongly pruinose overall; striae rather shallow but well-defined and regular, impunctate, intervals weakly subconvex; posterior discal setae constantly absent (+0+). Aedeagus 0.97-1.13, mean $1.05 \pm .05$ mm long, much larger than that of *menetriesi* (or the species described above in this paper); basal bulb larger and deflexed, median lobe moderately arcuate, briefly produced, apex spout-shaped and not reflexed; transfer apparatus typical for *menetriesi* group.

Type series.— Holotype male (American Museum of Natural History) and 76 paratypes, Rhoton Cave, 3.3 km SW Hestand on N side valley of Sweetwater Creek, Monroe Co., Kentucky (Tompkinsville $7\frac{1}{2}'$ Quadrangle), 7 August 1963, T. C. Barr, R. A. Kuehne. Measurements of holotype (mm): total length 5.28, head 1.02 long X 0.93 wide, pronotum 1.02 long X 1.24 wide, elytra 3.19 long X 2.05 wide, antenna 3.97.

Distribution.— Described on 279 specimens from 17 caves. The range of this taxon is roughly Y-shaped, centered in Monroe County, Kentucky, but extending northwest into southeastern Barren and southwestern Metcalfe counties, northeast to southern Adair and northwestern Cumberland counties, and south to Clay and northern Jackson counties, Tennessee, where it inhabits caves in Ordovician limestone at Central Basin level.

Pseudanophthalmus cerberus completus, new subspecies

Fig. 7

Etymology.— Latin *completus*, "complete."

Description.— Similar in size (4.6-5.4 mm) and habitus to *cerberus*

cerberus, differing in presence of both pairs of elytral discal setae (++++) and longer and straighter aedeagus (length 1.15-1.43, mean 1.30 ± 0.90 mm) with slightly reflexed tip (as in Fig. 7).

Type series.— Holotype male (American Museum of Natural History) and 11 paratypes, Cole Cave, 1.8 km N Austin, Barren Co., Kentucky (Austin 7½' Quadrangle), 12 February 1966, T. C. Barr; 11 additional paratypes, same cave, 13 April 1973, R. Pape. Measurements of holotype (mm): total length 5.52, head 0.87 long X 0.81 wide, pronotum 0.87 long X 1.02 wide, elytra 2.76 long X 1.67 wide, antenna 3.66.

Distribution.— Described on 33 specimens, all from central Barren County, Kentucky: Cole, Beckton, Bryant Edmonds, Geraldts, Mitchell, Hansons, and Slick Rock caves. Hybridization with nominate *cerberus* occurs in Bowles Branch Cave, 8.4 km southeast of Glasgow. Ranges of *P. m. campestris* and *P. c. completus* are almost parapatric, rare examples of the latter having been collected in Beckton and Hansons caves, where *P. m. campestris* is more abundant. This taxon coexists with *P. striatus* (hind angles produced; elytra not pruinose), *P. pubescens* (apical groove well developed), and *Neaphaenops tellkampfi*.

Pseudanophthalmus darlingtoni darlingtoni, new species and subspecies

Fig. 8

Etymology.— Patronymic honoring the late Philip J. Darlington, Jr.

Diagnosis.— A large species of the *menetriesi* group with shallow, impunctate striae, convex elytra with normal chaetotaxy (+++), disc weakly pruinose overall; pronotum with 1-2 long setae each side of disc and hind angles produced backward as in *P. striatus*.

Description.— Length 4.9-6.3, mean 5.7 ± 0.3 mm (N = 207). Robust, convex, pubescent. Head about 0.14 (mean index) longer than wide, dorsum subglabrous; labrum with small median lobe. Pronotum about 0.85 (mean) as long as wide, transverse-cordiform, widest in apical fourth; anterior angles scarcely produced; sides rounded apical 0.4 then convergent with very shallow or no sinuation to hind angles, which are small, sharp, and slightly obtuse; base with small, rounded, secondary angles, not obliquely inclined forward at sides (thus differing from *menetriesi* and *cerberus*); disc with scattered, rather long pubescence and 1-2 long setae each side; apex as wide as base and two-thirds greatest width. Elytra oblong-oval, very convex with deplanate circumscutellar area, $1.56 \pm .04$ times longer than wide (range 1.40-1.60), widest behind middle and with posthumeral marginal sinuation (as in *striatus* but deeper), humeri very prominent, prehumeral borders not quite perpendicular to mid-line, humeral serrations very coarse; disc microsculpture finely transverse, forming tight meshworks, disc with weak pruinose microsculpture over entire surface; longitudinal striae moderately and evenly impressed, rather shallow, intervals subconvex to nearly flat,

with 2-3 rows of rather long pubescence each, inner 5 striae deeper but outer striae still usually all discernible, striae impunctate, rarely evanescently punctulate; apical recurrent groove vestigial but usually faintly traceable to 5th stria, rarely to 3rd; discal chaetotaxy normal (+++). Aedeagus 0.82-1.03, mean $0.90 \pm .06$ mm long ($N = 56$); basal bulb large, forming less than right angle with main axis of median lobe, which is moderately arcuate, gradually and briefly attenuate, slightly reflexed at apex; copulatory pieces subequal in length, typical for *menetriesi* group; parameres with 4 apical setae.

Type series.— Holotype male (American Museum of Natural History) and 39 paratypes, Jones Cave, 4.3 km NNE Columbia on E side valley of Butler Branch, Adair Co., Kentucky (Cane Valley $7\frac{1}{2}'$ Quadrangle), 27 July 1963, T. C. Barr. Measurements of holotype (mm): total length 5.60, head 1.07 long X 0.89 wide, pronotum 1.04 long X 1.19 wide, elytra 3.24 long X 2.02 wide, antenna 3.79 long.

Distribution.— Described on 306 specimens from 20 caves in northeastern Metcalfe, northern Adair, and southern Green counties, Kentucky. Distribution and variation in *P. darlingtoni* is discussed in detail elsewhere (Barr, in press). Hybridization with the following subspecies takes place in populations near the mouth of Little Barren River.

Pseudanophthalmus darlingtoni persimilis, new subspecies

Fig. 9

Etymology.— Latin *persimilis*, "resembling."

Description.— Length 4.8-6.4, mean 5.5 ± 0.3 mm ($N = 40$). Head, pronotum, and elytra more slender than in nominate *darlingtoni*; pronotum widest in apical third, usually with more pronounced antebasal sinuation, hind angles correspondingly less prominent, prehumeral borders a little more oblique to mid-line, circumscutellar depression shallower, posthumeral marginal sinuation very feeble. Aedeagus similar to that of *P. d. darlingtoni*; mean length smaller, 0.77-1.00, mean $0.87 \pm .06$ mm ($N = 16$).

Type series.— Holotype male (American Museum of Natural History) and 25 paratypes, Woodard Cave, 5.0 km NW Donansburg near Little Barren River, Green Co., Kentucky (Hudgins $7\frac{1}{2}'$ Quadrangle), 22 September 1963, T. C. Barr, J. R. Holsinger, R. M. Norton. Measurements of holotype (mm): total length 5.72, head 1.04 long X 0.95 wide, pronotum 1.07 long X 1.19 wide, elytra 3.34 long X 2.11 wide, antenna 3.87 long.

Distribution.— Described on 90 specimens from 11 caves in Green County, north of Green River (a dispersal barrier upstream from the mouth of Little Barren River, where it flows in a bed of lower, cherty Fort Payne formation), and in eastern Hart County, Kentucky.

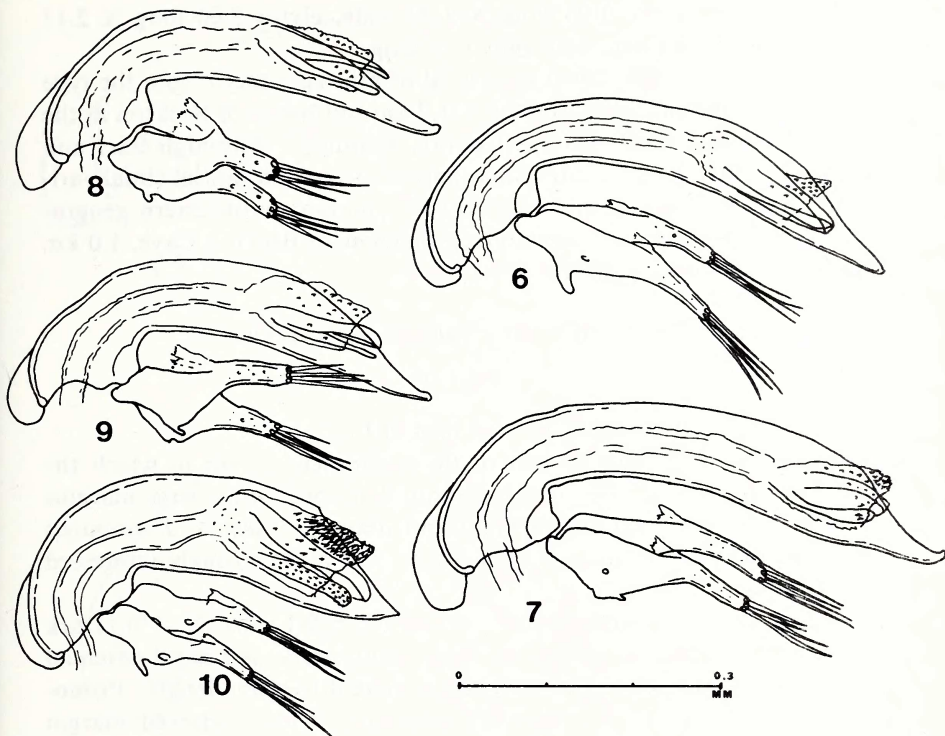


Fig. 6-10. Aedeagi of *Pseudanopthalmus* spp., left lateral view. 6: *cerberus cerberus*, n. sp. and subsp. 7: *cerberus completus*, n. subsp. 8: *darlingtoni darlingtoni*, n. sp. and subsp. 9: *darlingtoni persimilis*, n. subsp. 10: *pubescens intrepidus*, n. subsp.

Pseudanopthalmus pubescens intrepidus, new subspecies

Fig. 10

Etymology.— Latin *intrepidus*, “undaunted, intrepid.”

Description.— Length 5.3-6.1, mean 5.7 mm, more robust and depressed than nominate *pubescens*. Pronotum more transverse, sides less strongly convergent and scarcely sinuate in basal half, width at base 0.75 maximum width. Elytral discal chaetotaxy consistently normal (+++), disc slightly less convex than in nominate *pubescens*, intervals quite flat. Aedeagus larger, length 1.06-1.19, mean 1.11 mm.

Type series.— Holotype male (American Museum of Natural History) and 2 paratypes, Buchanan Cave, 1.3 km W Gainesville and 30 m E KY Rt. 101, at head of hollow tributary to Difficult Creek, Allen Co., Kentucky (Scottsville 7½' Quadrangle), 18 August 1963, T. C. Barr. Measurements of holotype (mm): total length 6.11, head 1.05 long X

1.05 wide, pronotum 1.25 long X 1.39 wide, elytra 3.60 long X 2.17 wide, antenna 4.43 long, aedeagus 1.12 long.

Distribution.— Described on a total of nine specimens from the type locality and Bryant Edmonds Cave, 1.7 km southwest of Beckton at the head of Greens Creek, Barren County, Kentucky. Although Barr and Crowley (1981) demonstrated what appears to be substantial clinal variation in *P. pubescens*, this relatively uncommon southwestern geographic race hybridizes with nominate *pubescens* in Beckton Cave, 1.0 km northwest of Beckton, Barren County.

Trechus (Trechus) caliginis, new species

Fig. 11

Etymology.— Latin *caliginis*, “of mist or fog.”

Diagnosis.— A large species of the *hydropicus* group in which the aedeagal apex is simply attenuate, not knobbed; pronotum margins broadly reflexed, hind angles blunt and obtuse; closest to *T. roanicus* Barr but differing in pronotal characters and more strongly impressed elytral striae.

Description.— Length 3.9–4.2, mean 4.0 ± 0.1 mm (N = 5). Dark castaneous to reddish castaneous; legs, mouthparts, and basal antennal segments slightly paler. Eye diameter subequal to scape length. Pronotum 0.7 as long as wide, base 0.8 maximum width; reflexed margin unusually wide, sides convergent without trace of sinuosity to blunt, obtuse hind angles. Elytra very convex, 1.33 longer than wide, 5 striae present, moderately impressed but intervals either flat or very feebly convex. Aedeagus of holotype 0.52 mm long, basal bulb small and deflexed at right angle to slender, very straight median lobe, which is gradually attenuate and feebly reflexed at apex; left copulatory piece slender, rod-like, about 0.6 as long as right piece, which is hemicylindrical and bears small, irregular scallops on dorsal margin near bluntly rounded apex; parameres slender, weakly arcuate, with 3 long apical setae.

Type series.— Holotype male (American Museum of Natural History) and one male paratype, Camp Creek Bald, just below summit, elevation about 1460 m, Greene Co., Tennessee/Madison Co., North Carolina (Greystone $7\frac{1}{2}'$ Quadrangle), 9 August 1983, T. C. Barr, Jr., T. C. Barr III; three female paratypes, same locality, 21 August 1960, T. C. Barr, Jr., M. C. Bowling. Measurements of holotype (mm): total length 3.96, head 0.73 long X 0.70 wide, pronotum 0.70 long X 1.01 wide, elytra 2.30 long X 1.71 wide, antenna 2.11 long, aedeagus 0.52 long.

Distribution.— At present known only from the type locality in the Bald Mountains between Greeneville, Tennessee, and Asheville, North Carolina, this species will key out near *T. roanicus* in my key to Appalachian *Trechus* (Barr 1979a); all other species of the *hydropicus* group possess a more or less knobbed aedeagal apex.

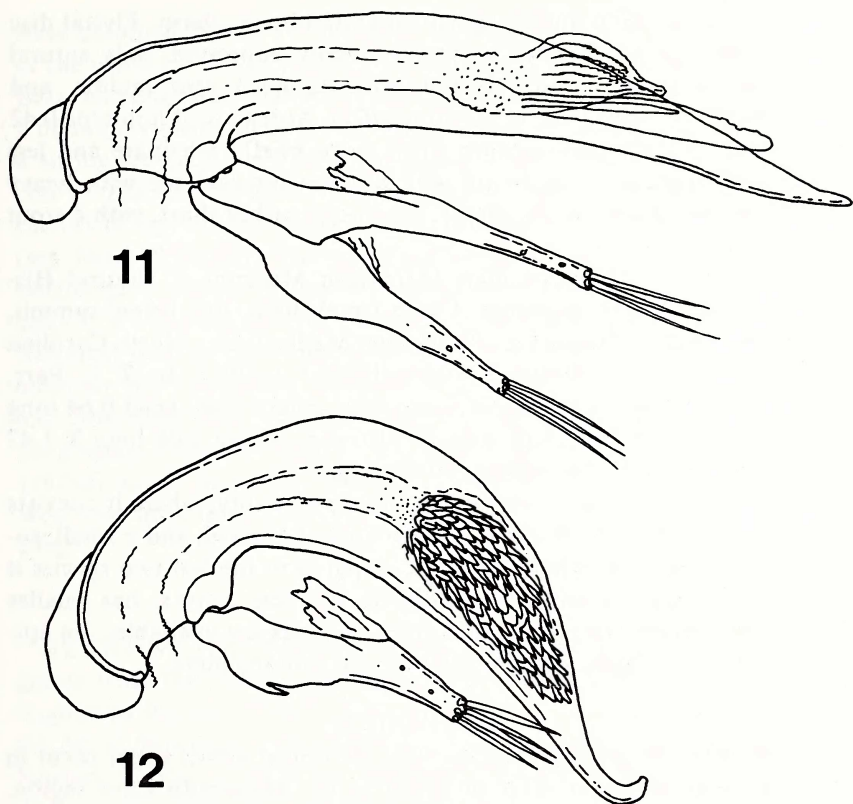


Fig. 11-12. Aedeagi of *Trechus* spp., left lateral view. 11: *T. (T.) caliginis*, n. sp. 12: *T. (Microtrechus) inexpectatus*, n. sp.

Trechus (Microtrechus) inexpectatus, new species

Fig. 12

Etymology.— Latin *inexpectatus*, "unexpected."

Diagnosis.— A species of the *uncifer* group closest to *T. uncifer* Barr, differing in larger size, more convex elytral disc with very shallow striae, and aedeagal apex less produced.

Description.— Length 3.46-3.59 mm (N = 2). Dark castaneous; legs, mouthparts, and basal antennal segments paler but not flavous as in *uncifer*, consequently less contrasting. Eye diameter less than scape length. Pronotum closely similar to that of *uncifer*: sides convergent, then almost subparallel but very briefly so, just opposite posterior mar-

ginal punctures; hind angles right to slightly obtuse, sharp. Elytral disc moderately convex, 3 inner striae very feebly impressed, only sutural complete, intervals completely flat (disc flattened near middle, and striae deep with convex intervals in *uncifer*). Aedeagus of holotype 0.42 mm long, very strongly arcuate, apex more briefly attenuate and less sharply hooked, in comparison with *uncifer*; internal sac with heavy scales obscuring copulatory pieces; parameres rather short, with 4 stout apical setae.

Type series.— Holotype male (American Museum of Natural History) and one female paratype, Camp Creek Bald, just below summit, elevation 1460 m, Greene Co., Tennessee/Madison Co., North Carolina (Greystone 7½' Quadrangle), 9 August 1983, T. C. Barr, Jr., T. C. Barr, III. Measurements of holotype (mm): total length 3.46, head 0.64 long X 0.70 wide, pronotum 0.67 long X 1.01 wide, elytra 2.08 long X 1.47 wide, antenna 1.71 long, aedeagus 0.42 long.

Distribution.— Known only from the type locality, where it coexists with *T. caliginis*, *T. hydropicus beutenmuelleri* Jeannel, and a small isolate near *T. (M.) vandykei* Jeannel. Compared to the last two species it is distinctly larger; compared to *caliginis* it is less convex, has smaller eyes, very shallow elytral striation, and—if males are available—an apically hooked aedeagus and a single enlarged protarsomere.

DISCUSSION

All of the *Pseudanophthalmus* taxa described in this paper occur in south-central Kentucky, east or south of the Mammoth Cave region. Nine belong to the *menetriesi* group, which is defined by the forward position of the anterior discal puncture of the elytron opposite the 2nd umbilicate puncture, a vestigial apical elytral groove, and the structure of the transfer apparatus. The copulatory pieces resemble those of the *pubescens* group but are simpler and lack spines or apical knobs (Barr 1979b). The pronotum hind angles are tilted forward in *menetriesi* and its close allies (*simulans*, *pilosus*, *globiceps*, *transfluvialis*; weakest in *globiceps*) and also in *cerberus*. The hind angles are produced backward in *darlingtoni* and *striatus*. Both *cerberus* and *darlingtoni* have pruinose elytral microsculpture, which is absent in other species of the *menetriesi* group (although present to a greater or lesser extent in all species of the *pubescens* group). *Pseudanophthalmus pubescens intrepidus*, which occurs on the southern periphery of the range of polytypic *pubescens*, manages to cross the upper Barren River in the vicinity of Barren River Dam, where *Neaphaenops tellkampfi* crosses (Barr 1979b). The Barren is a barrier at Bowling Green, but not in part of its upstream course (Barr, in press).

The two larger *Trechus* species described from Camp Creek Bald

were obtained during a study of electrophoretic variation in the isolates of the *vandykei* group (*vandykei*, *pisgahensis* Barr, *tusquitee* Barr, *haoe* Barr, *bowlingi* Barr and seven undescribed species). They represent only 2 of 18 previously undescribed Appalachian *Trechus* species obtained by a sifting technique in 1982-1984 (Barr, in preparation). With four species of *Trechus*, three of them endemics, Camp Creek Bald now joins the list of eight other massifs in the Unaka region with endemic species (see Barr 1979a:41). *Trechus inexpectatus* is the only species of the *uncifer* group currently known east of the Asheville basin; morphologically it is closer to *uncifer* (Great Smokies) and *satanicus* Barr (Great Balsams) than to the series of species morphologically clustered around *aduncus* Barr (including *talequah* Barr, *howellae* Barr, *toxawayi* Barr and *coweensis* Barr; see Barr 1979a for descriptions, illustrations, and geographic ranges). Camp Creek Bald is shown on Figure 46 in Barr (1979a) but is incorrectly labeled "Camptown Bald." The site lies at the west end of a long ridge 1300-1500 m in elevation and about 10 km long.

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