

Hydrocolus heggiensis, a new species from Georgia and South Carolina (Coleoptera: Dytiscidae)

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Abstract: *Hydrocolus heggiensis*, a new species of predacious water beetle, is described from granite monadnocks in Georgia and one location in South Carolina. It most closely resembles *H. stagnalis* (Gemminger and Harold) but differs in range, genitalia, and elytral punctation. Photographs, drawings, and an interpolation of the new species into existing keys are given.

Introduction

Specimens of the dytiscid genus *Hydrocolus* in my collection from interesting habitats in Georgia and South Carolina first were keyed to *H. stagnalis* (Gemminger & Harold). However, the known range of that species, Newfoundland to Rhode Island and west to Illinois (Larson et al. 2000), is far from Georgia and South Carolina. Examination by David J. Larson determined that the genitalia differ considerably, and thus the southeastern specimens constitute a new species (Larson 2001, pers. comm.).

Five of the first six specimens came from Heggie's Rock, a granite monadnock in Georgia near the South Carolina border with vernal pools and uncommon plants, protected by The Georgia Nature Conservancy. Further search uncovered many additional recent specimens from Heggie's Rock, and older (1945) specimens from Arabia Mountain, another monadnock east of Atlanta. Additional specimens were identified from a pond over chert, a granite outcrop, and an unnamed pond (map, Figure 1). *Hydrocolus* species (formerly *Hydroporus oblitus*-group Fall) occur in mossy spring seepages, peatlands, and bog pools (Larson et al. 2000), so the restricted monadnock habitat of *H. heggiensis* is not surprising for this genus.

Specimens may be viewed at these collections: USNM, United States National Museum, Washington (holotype to be placed there); UGCA, University of Georgia, Athens; FSCA, Florida State Collection of Arthropods, Gainesville; CUAC, Clemson University Arthropod Collection, Clemson, SC; JDS, John D. Spooner, Aiken, SC; JCC, Janet C. Ciegler, West Columbia, SC.

Hydrocolus heggiensis Ciegler, new species

Holotype: Male labeled as follows: GA: Columbia Co./Heggie's Rock/ in vernal pool/ 28-III-1992/ Coll.

J. C. Ciegler. Genitalia removed and mounted on separate point. To be deposited in USNM. Five paratypes to be distributed to various museums.

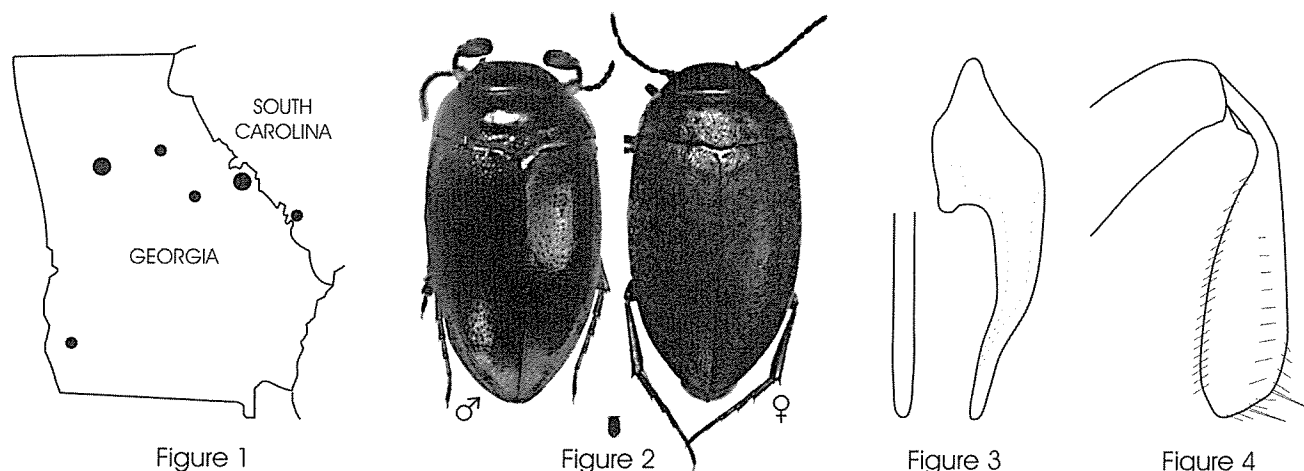
Etymology: Named for Heggie's Rock, an area protected by The Georgia Nature Conservancy, where most of the recent specimens were found.

Description: Moderate size, length 2.87 to 3.35 mm; ratio length to width = 1.82 to 2.00. Body, in dorsal aspect, elongate-oval to subparallel in outline, widest near middle; elytra slightly wider than width of pronotum at base (Figure 2).

Color of dorsal surface brown, reddish brown, or dark reddish brown; clypeus, labrum, and lateral margins of pronotum testaceous to reddish brown. Ventral surface reddish brown to piceous in fully hardened specimens, some specimens with abdominal sterna reddish laterally; elytral epipleura lighter than sterna; teneral specimens yellow. Legs, palpi, and antennomeres 1-2 bright reddish to yellowish brown; maxillary palpomere 4 and antennomeres 3-11 more or less darker at apex.

Head finely and sparsely punctate. Pronotum moderately punctate near all margins, more finely and sparsely so on disk. Elytra of male moderately punctate, punctures separated by about 2 to 4 times their diameters; elytra of female more finely and densely punctate. Elytral epipleuron moderately punctate with a row of larger punctures near medial margin. Metasternum, abdominal sterna, and hind coxae very finely and sparsely punctate medially, moderately densely and coarsely laterally. Dorsal surface of male shiny but finely microreticulate, elytral meshes larger than those of pronotal disk. Female with sculpture more markedly impressed, some specimens (12 of 19 examined) with surface very dull and shagreened.

Eyes moderate; width of head across eyes (WR1)/width between eyes = 1.46 to 1.60. Pronotum broad-



Figures 1 - 4. 1. Collection localities, *Hydrocolus heggiensis*. Larger symbols: Arabia Mountain (left) and Heggie's Rock (right); 2. Habitus, *Hydrocolus heggiensis*: Left, male; right, rough form of female; 3. Male aedeagus, *Hydrocolus heggiensis*. Left, apex, dorsal aspect; right, lateral aspect; 4. Left front tibia of male *Hydrocolus heggiensis*, anterior aspect.

er than head; width of pronotum at base/WR1 = 1.48 to 1.66. Pronotum in dorsal aspect widest at base, uniformly curved laterally, or nearly straight basally and more abruptly curved at apical third; hind angles acute, very narrowly rounded; basal area slightly impressed, more deeply so at hind angles; lateral margins not deplanate, impressed along marginal bead. Marginal bead about as wide as antennomere 2, with a second minute parallel bead noticeable basally.

Elytra somewhat ovate (males) to nearly parallel (some females), widest near or behind middle. Body in lateral aspect somewhat depressed; metasternum on same level with prosternal process. Prosternum anteriorly with a raised transverse ridge, rugose anterior to ridge, evenly rounded between ridge and prosternal process; process oval, deeply margined laterally, rather flat with low medial convexity, with acute and unmarginated apex. Metacoxal lines divergent anteriorly.

Male protibia resembling that of other *Hydrocolus* species (fig. 106B, Larson et al.) but bent at a greater angle at emargination and with a tooth on proximal part of ventral surface (Figure 3). Female protibia slightly more curved near knee and slightly more sinuate internally than that of *H. deflatus*. Aedeagus (Figure 4) slender, tapered to a point in dorsal aspect, more flattened in lateral aspect than in most other species of *Hydrocolus*.

Ecology: Forty of the 43 specimens examined were found on granite monadnocks and outcrops in vernal pools and flows or trickles over granite or in

Selaginella spikemoss growing near the outcrops. This seems to be the preferred habitat for the species. One specimen came from a shallow pond where chert had been quarried for arrowheads by native Americans. None have been reported flying to lights.

Distribution: Known only from Georgia and South Carolina; Jan., Mar.-June, Oct.

Modification to key to species of *Hydrocolus*, Larson et al., 2000, page 411:

- 5(4) Pronotal disk with scattered coarse punctures in addition to micropunctures; pronotum with lateral bead distinct, and a narrow elongate area parallel to and interior to bead impressed .. 5a
- 5' Pronotal disk with micropunctures only; pronotum with lateral bead less distinct, not impressed interior to bead; Pennsylvania and Indiana south to Arkansas and Missouri 5. *H. oblitoides* (in part) Roughley & Larson
- 5a(5) Elytral punctures coarse, markedly impressed; elytron with three lines of lengthwise coarser punctures; some specimens with pronotum narrowed posteriorly and discontinuous with outline of elytra at base; more boreal species, Newfoundland to Alberta and south to Rhode Island, Illinois, and Wisconsin 9. *H. stagnalis* (G. & H.)
- 5a' Elytral punctures finer, all of same size, not markedly impressed; pronotum not narrowed posteriorly and not narrower than elytra at

base; southern species, Georgia and South Carolina *H. heggiensis* n. sp.

Specimens examined: UNITED STATES. GEORGIA. Baker Co., C. L. Smith, 2.4 mi. W of Newton off Rte. 37, 11-IV-1975, pond (1, UGCA); Columbia Co., J. C. Ciegler, Heggie's Rock, betw. Appling and Lewiston, about 4 mi. N of I-20, 28-III-1992 (1, USNM), in vernal pool; Columbia Co., J. C. Ciegler, Heggie's Rock, 31-III-1991 (4, USNM, CUAC, FSCA, JCC), in flow over granite; Columbia Co., J. D. Spooner, Heggie's Rock, 2-III-1996, trickle (2); Columbia Co., J. D. Spooner, Heggie's Rock, 25-III-1996, trickle (4), in *Selaginella* (2); Columbia Co., J. D. Spooner, Heggie's Rock, 6-I-1997, pools (6); Columbia Co., J. D. Spooner, Heggie's Rock, 6-VI-1997, sweeping (2); Columbia Co., J. D. Spooner, Heggie's Rock, 9-X-1997, pools (4), sweeping (2); DeKalb Co., P. W. Fattig, Arabia Mtn., E of Lithonia, 26-X-1945 (2, UGCA); DeKalb Co., P. W. Fattig, Arabia Mtn., 27-X-1945 (8, UGCA); Hancock Co., R. White, 5 mi s of Sparta on GA 15, 9-V [no year], granite outcrop (3, UGCA); Madison Co., P. Thornley, Comer, 29-IV-1961 (1, UGCA); SOUTH CAROLINA. Allendale Co.,

J. C. Ciegler, off SC-3 about 13 mi. SW of Allendale, in shallow pool, 26-III-1988 (1, JCC).

Acknowledgments

I thank David J. Larson of the Memorial University of Newfoundland for examination of my specimens and confirmation that they are a new species. Also I thank John D. Spooner of the University of South Carolina, Aiken (retired) for his gift of specimens, Cecil L. Smith of the University of Georgia Museum of Natural History for loan of specimens, and Alex Ciegler for photography.

References

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