

## NOTES ON INDIANA WATER BEETLES

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**ABSTRACT:** *Hydroporus republicanus republicanus* Sharp is reported from Indiana along with *Gyrinus marginellus* Fall. The latter may be the *Gyrinus limbatus* of Thomas Say, 1823. Notes are given on the occurrence of *Hydroporus deflatus* Fall in Indiana and elsewhere. This species may be the *Hydroporus corvallis* of Fall. The type of *Dineutus ciliatus* (Forsberg) described from the East Indies bears a simple label "Ind.," which probably indicated Indiana. The species is common in woods and streams in southern Indiana and occurs widely over the eastern United States.

Several years ago while working in the British Museum (Natural History) in London, I came to the conclusion that *Hydroporus republicanus* Sharp (1882) was the same as specimens from Louisiana, Georgia, and Florida. Specimens from the latter two States were with few exceptions strongly melanized and fit closely the description of *Hydroporus effeminatus* Fall (1923) from Levy County, Florida. Later, comparison of specimens with Fall's types in the Museum of Comparative Zoology (MCZ) at Harvard University confirmed this conclusion.

Typical *republicanus* was not recognized from Owen County, Indiana, in Young's 1978 paper (description of *Hydroporus psammodytes* Young). However, it occurs abundantly in the marginal vegetation and debris of Fish Creek west of Freedom and has since been taken in Brown County (Goodley Branch near Belmont) and Monroe County (margin of stream east of Bloomington). It probably occurs widely in the eastern United States. *Hydroporus* comparable to *effeminatus* Fall occur abundantly in Florida and southern Georgia. They are nearly identical with typical *republicanus* except for their much darker coloration. They should be referred to *Hydroporus republicanus effeminatus* Fall (new combination).

Both subspecies are distinguishable from the rest of the *Hydroporus undulatus* complex by their size (3.0-3.9 mm total length), the narrow anterior tarsi of the males, the very smooth surface in the males which Fall considered practically impunctate, and the reduced but distinctive sub-basal and post median fasciae of light spots on the elytra. The latter are usually detectible even in the most heavily melanized specimens of *effeminatus*. The male genitalia are of the usual *undulatus* type and not especially noteworthy. The character of the pronotal border emphasized by Fall in the description of *effeminatus* is difficult to assay at best. Once recognized, *republicanus* in its typical form and the dark *effeminatus* are easily distinguished from other members of the group.

*Hydroporus deflatus* Fall was described from Virginia and New York (Fall, 1923). It is a member of the *Hydroporus oblitus* group, whose members are semi-subterranean in the gravel beds of springs and small streams. They retreat into the gravel when the water is low and reappear upon flooding. *H. deflatus* is easily

distinguished from the other species in the group by its larger size (total length 3.5 to over 4 mm) and distinctive male genitalia. The species is widely distributed from New York to Indiana, south to Florida. It may also be identical with *Hydroporus corvallis* Fall (1923) known (as far as the author can determine) from a single female from Corvallis, Oregon.

Specimens of *H. deflatus* have been seen in the following localities: Glencaryn, Alexandria County, Virginia, Ernest Shoemaker collector (type in MCZ); Staten Island, New York, J.D. Sherman collection, New York State Museum; Pennsylvania, Crawford County, Pymatuning State Park, rain gauge, F.N. Young collector in FSCA; Tennessee, Robertson County, pond west of Hubertsville, G.W. Wolfe collection in FSCA; Maryland, Edgewood, H. Dietrich collector in Cornell University collection; Indiana, Brown, Jackson, and Monroe Counties, F.N. Young collector in Purdue University, Laboratory of Insect Diversity, and FSCA; Florida, Columbia County, near Lulu, F.N. Young collector, recorded as *Hydroporus* (*s. str.*) *dichrous* Melsheimer?, in Young (1954); Florida, Suwanee County, Suwanee State Park, black light trap, J.R. Wiley collector in FSCA.

*Gyrinus marginellus* Fall was described from New Jersey without any indication of habitat preferences. K.F. Chamberlain (1929), however, described the sort of situations in which the author has also found *marginellus*, along with *Gyretes compressus* LeConte and *Dineutus ciliatus* Forsberg, in Greene and Owen Counties, Indiana. These species are presumably nocturnal in habits and normally seek out the darkest areas in their habitat. *Ciliatus*, for example, has been found not only under undercut stream banks, but also under log rafts in streams in Owen County. In Florida, a long series of *Gyretes iricolor* Young was found near the type locality in Holmes County under banks as described by Chamberlain. The *Spanglerogyrus* recently described from Alabama may also be a nocturnal creature, the diurnal habitat of which is in deeply shaded or dark situations. Other species of the Gyrinidae may also be abundant in such situations and are rare in collections only because night collecting is not common.

In June, 1981, a large number of *Gyrinus marginellus* was found in small pools beneath undercut banks in Bay County, Florida, supporting the suspicion that this may be *limbatus* of Say.

*Gyrinus marginellus* is fairly easy to distinguish from other species of *Gyrinus* by its size (total length 3.9 to 4.5 mm), the reddish brown venter, the highly polished surface of the pronotum and elytra particularly in males, and the broadened apex of the male aedeagus. The only species with which it is apt to be confused is *Gyrinus elevatus* LeConte, which has a very distinctive narrowing of the male aedeagus and is relatively rare outside Florida.

*Gyrinus piceolus* Blatchley remains a rather rare beetle in Indiana or elsewhere. The localities remain the same as cited in Young (1953): Lake County, Indiana (Type locality); Lafayette, Indiana, and Washtenaw County, Michigan (specimens in Purdue University, Laboratory of Insect Diversity). This species also may be nocturnal in habits.

*Dineutus ciliatus* Forsberg was reported by Young in 1978. The discovery of the beetle in Indiana was due to the diligence of Darwin and K.K. Kinney of Freedom, Indiana. They discovered the species in Fish Creek west of Freedom in the 1950's. The confirmation through examination of the male genitalia, however, did not come for some years afterwards. The beetles occurred around a log raft

which formed near the bridge over the creek at Goose Creek Road and were common only under and near this mass of logs. In the 1980s, the raft broke up and was dispersed by flooding. *Dineutus ciliatus*, however, was found in small schools where the raft had been for some years afterwards.

It is interesting that *Dineutus ciliatus* was described from the East Indies. The type specimen (in the Thunberg Collection in the museum in Upsala, Sweden) bears a simple label reading "Ind." Forsberg (1821) apparently misinterpreted this to mean "Indies Oriental." Since the species occurs widely from Florida to Massachusetts and is not found in the East Indies, Indiana seems to be a likely type locality.

*Gyretes compressus* LeConte is another species, rare in collections, which is probably nocturnal in habits, withdrawing to heavily shaded or partially enclosed situations during the day. It was fairly common under the log mat in Owen County and also under banks of Richland Creek south of Bloomfield in Greene County (Young, 1978).

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