

Hydraena britteni Joy new for the Netherlands (Coleoptera: Hydraenidae)¹⁾

by

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ABSTRACT. — A description of sampling-localities of *Hydraena britteni* Joy, which is new for the Netherlands, is given. Some notes on the ecology of the species are made and a distribution-map of the species in the Netherlands is given.

INTRODUCTION. — The genus *Hydraena* comprises a large number of species of a strikingly uniform shape. On account of morphological characteristics and differences in the aedeagophore the genus is split up into subgenera. *Hydraena britteni* belongs to the subgenus *Hydraena* s.s., which is characterized by the elytra possessing more than six punctured striae between suture and shoulder, the metasternum carrying two shining ridges and the aedeagophore possessing two parameres (Tiberghien, 1976). In this subgenus the species are distinguishable in the male sex by means of the aedeagophore and/or secondary sexual characteristics; identification of females is difficult by lack of distinct characters and therefore not always certain.

In Central Europe fourteen species belong to this subgenus (Lohse, 1971). Of these fourteen species four occur in the Netherlands (Brakman, 1966), viz. *Hydraena palustris* Erichson, *Hydraena riparia* Kugelan, *Hydraena nigrita* Germar, and *Hydraena pygmaea* Waterhouse. According to Tiberghien (1976) *H. pygmaea*, however, belongs to the subgenus *Hadrenya*. *H. palustris* can easily be distinguished from the other species by the almost parallel sides of the first half of the pronotum and by its light-brown colour. *H. nigrita* possesses shorter elytra (width maximally 7/10 of its length) as the other species. *H. riparia* and *H. britteni* resemble each other very much. In the keys of the Hydraenidae which are commonly used in the Netherlands (Everts, 1903; Drost & Schreijer, 1976) *H. britteni* is not mentioned. Horion (1935), with reference to Everts (1922 p. 302) mentioned the species for the Netherlands, but Everts recorded the species only from Germany and France and not from the Netherlands.

By examining a great number of specimens resembling *H. riparia* from different localities, it appeared that we had collected specimens of *H. britteni* from twenty-eight localities.

Differential characteristics of *H. britteni* and *H. riparia*. — Males and females in the genus *Hydraena* can easily be distinguished. The females have seven visible sterna and the males only six. Differences between *H. riparia* and *H. britteni* are the following (according to Derenne, 1952):

<i>H. riparia</i>	<i>H. britteni</i>
— Punctuation of the pronotum strong and uniform	— Punctuation of the pronotum stronger at the sides than in the middle
— Sides of the pronotum form a distinct angle in the middle	— Sides of the pronotum form an obtuse angle in the middle
— Sides of the pronotum from the middle to the base strongly drawn back and slightly concave	— Sides of the pronotum from the middle to the base drawn back in a straight line
— Back angle of pronotum sharp and straight	— Back angle of pronotum distinct but obtuse
— ♀: apical segment of the palpus maxillaris 1.9 times as long as the penultimate	— ♀: apical segment of the palpus maxillaris 1.75 times as long as the penultimate

¹⁾ Mededeling: EIS-Nederland, no. 14

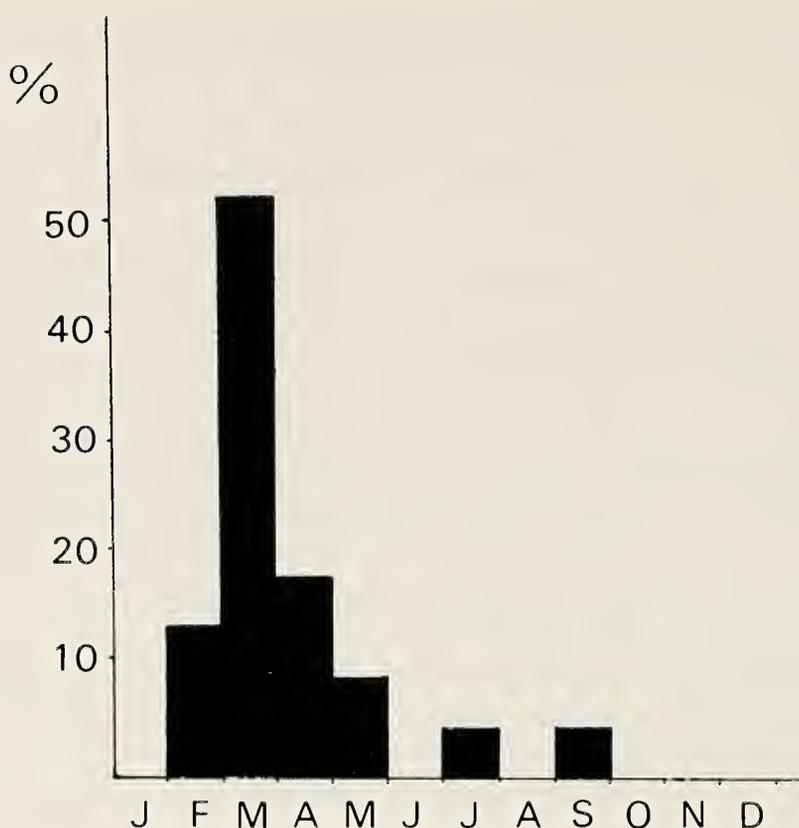


Fig. 1. Frequency-distribution of collecting dates of *H. britteni* in the Netherlands (23 collections).

— ♂: apical segment of the palpus maxillaris with a small bulge in the middle of the segment
 — ♂: adeagophore

— ♂: apical segment of the palpus maxillaris with a big bulge near the apex
 — ♂: adeagophore

Good drawings of the differences in the palpus maxillaris of the males of both species and the adeagophores, which are very characteristic, are given by Lohse (1971). Identification of females is only possible by a specialist, as the differences are very small.

Sampling localities of *H. britteni*. — Because a description of the sampling localities would be rather lengthy, this is not given in the present paper. A full description of the localities, and tables with physical and floristic data will be published elsewhere.

Habitat and phenology of *H. britteni*. — With respect to the localities it can be concluded that *H. britteni* is a species which is confined to small waters with a depth up to 50 cm. The maximum depth is not important as most specimens have been caught by trampling down the borders of the drains or brooklets and by collecting the animals by hand, which float near the watersurface. In the deeper parts of the drains no specimens have been caught. Landin (1976) has also found this species mainly at the water's edge.

Most specimens of *H. britteni* have been sampled in late winter and early spring (fig. 1) after the melting of the snow when the danger of freezing of the water during longer periods is not probable. In summer there have been only two records of the species from permanent waters. According to Landin (1976) *H. britteni* has a maximum abundance during spring, a minimum during summer and a lower maximum during late summer and autumn. His maximum in spring is in April and May and ours in March. Our findings are not in contradiction as his collections have been made in Sweden, where spring is later. This type of variation in abundance usually corresponds with an univoltine life-cycle: breeding during late spring, larvae developing and pupating during summer and hibernating of the adults.

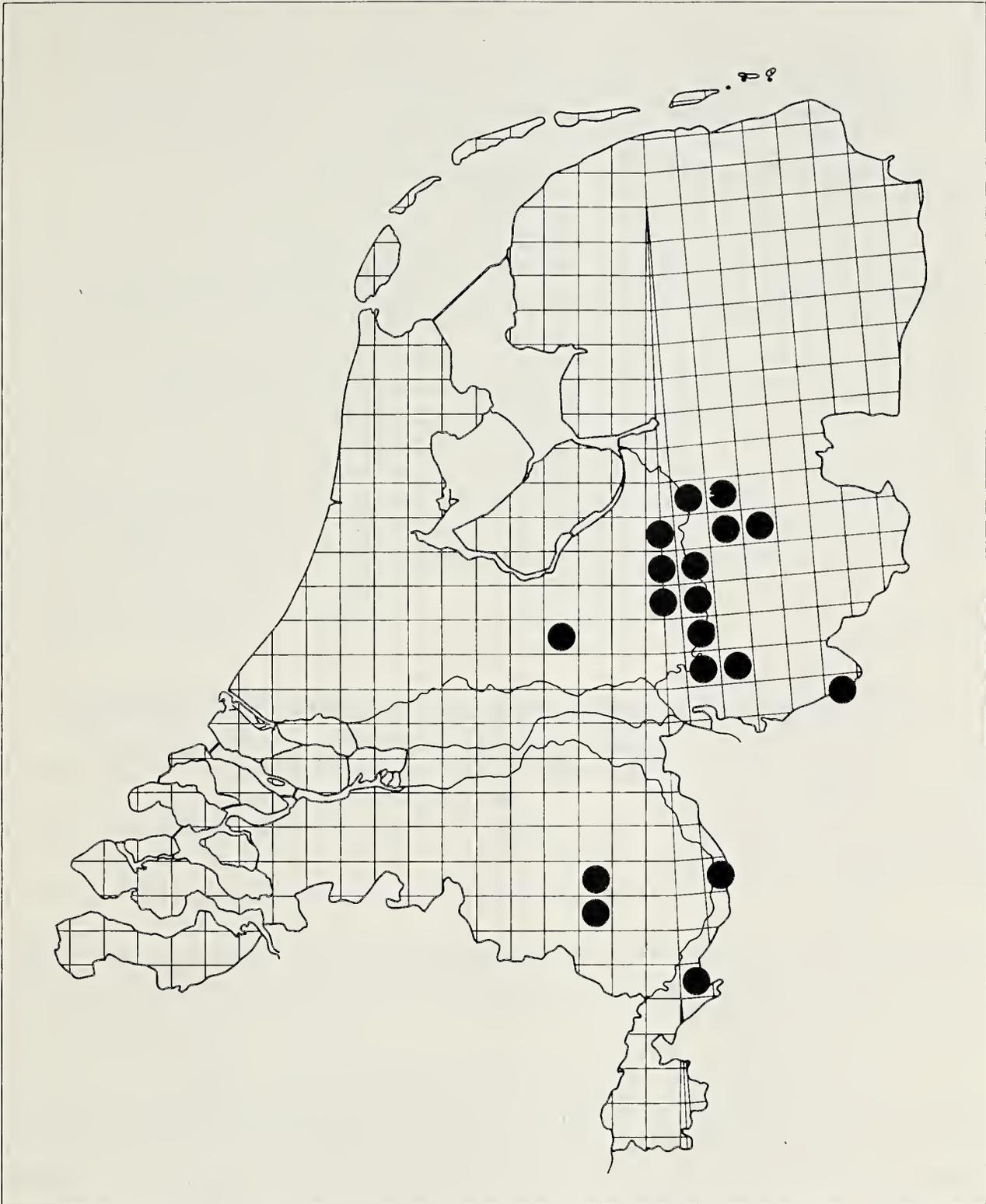


Fig. 2. Sampling localities of *Hydraena britteni* in the Netherlands plotted in the 10 × 10 km UTM-grid.

In the Netherlands *H. britteni* has been collected in a large number of localities, which have in common that they are temporary, stagnant waters. Within this water-type the species seems to prefer weekly acid waters with a peaty bottom, which is covered by coarse organic materials such as leaves of trees (mainly *Alnus*, *Salix* and *Quercus*) or litter of *Phragmites*, *Phalaris*, *Calamagrostis* and *Carex*. Such habitats are alder-brooks, drains in oak-woods, *Carex*- and *Calamagrostis*-marshes and swampy ditches with a vegetation of *Phragmites*, *Phalaris*, *Calamagrostis* or *Carex*. The data above affirm the statements of Hebauer (1980), that *H. britteni* is an acidophilous species.

Distribution of *H. britteni*. — According to Horion (1949) the species has a distribution-area

which comprises North- and Central-Europe: Great-Britain, Ireland (Balfour-Browne, 1958), France, Belgium (Derenne, 1952), Germany, Denmark, Scandinavia, Czechoslovakia (Hrbáček, 1951) and Russia.

In the Netherlands the species is distributed over the Southern and Eastern parts of the country (fig. 2). However it may be expected, that the species can be found in many places in the pleistocene parts of the Netherlands and perhaps also in the dunes.

The main reasons that the species has not been found earlier in the Netherlands are:

- the species is very small and easily overlooked;
- the best sampling-time is March; in summer, when most people collect beetles, the proper habitats have fallen dry;
- the identification of the species is difficult and often in the literature used, the species is not mentioned.

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REFERENCES

- Balfour-Browne, F., 1958. *British Water Beetles*, 3: 1-210, 87 figs., 67 maps, Ray Society, London.
- Brakman, P. J., 1966. Lijst van Coleoptera uit Nederland en het omliggende gebied. — *Monogr. Ned. ent. Ver.* 2: 1-219.
- Derenne, E., 1952. Les Hydraena de Belgique. — *Bull. Ann. Soc. ent. Belgique* 88: 195-218.
- Drost, B. & M. Schreijer, 1976. *Waterkevertabel*: 1-222, 420 figs. — Nederlandse Jeugdbond voor Natuurstudie.
- Everts, E., 1903. *Coleoptera Neerlandica* 1: 1-676, 62 figs., Martinus Nijhoff, Den Haag.
- , 1922. *Coleoptera Neerlandica* 3: 1-667, 19 figs., Martinus Nijhoff, Den Haag.
- Hebauer, F., 1980. Beitrag zur Faunistik und Ökologie der Elminthidae und Hydraenidae in Ostbayern (Coleoptera). — *Mitt. Münch. ent. Ges.* 69: 29-80.
- Horion, A., 1935. *Nachtrag zur Fauna Germanica: Die Käfer des Deutschen Reiches*: 1-370, 16 figs., Goecke, Krefeld.
- , 1949. *Faunistik der Mittel-Europäischen Käfer* 2: 1-388, Klostermann, Frankfurt am Main.
- Hrbáček, J., 1951. Revue des espèces du genre Hydraena Kug. sur le territoire de la république Tchécoslovaque. (Col. Hydroph.). — *Cas. čsl. Spol. ent.* 48: 201-226, 2 tables. (in Czech).
- Landin, J., 1976. Seasonal patterns in abundance of waterbeetles belonging to the Hydrophiloidea (Coleoptera). — *Freshwat. Biol.* 6: 89-106, 14 figs., 2 tables.
- Lohse, G. A., 1971. Familie: Hydraenidae. — *Die Käfer Mitteleuropas* (H. Freude, K. W. Harde & G. A. Lohse eds.) 3: 95-125, Goecke & Evers, Krefeld.
- Tiberghien, G., 1976. *Ecologie des Helodidae, Elminthidae et Hydraenidae d'un cours d'eau des Pyrenées atlantiques: Le Lissurage*: 1-444, 102 figs., Toulouse (Thesis).
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CORRECTIES

blz. 6, regel 13 van onderen, 17.VII moet zijn 27.VII

blz. 8, regel 13 van boven, 6 ♀♀ vervalt; regel 15 van boven, na 9 ♂♂ toevoegen: 6 ♀♀; regel

11 van onderen, 1980 moet zijn: 1981