

Ent. Soc. 39: 48-54). The river was moderately fast at this point, flowing over a rocky bed and heavily shaded by overhanging trees. The odonate fauna also consisted of *Onychogomphus uncatius* (Carp.), *Cordulegaster b. boltoni* (Don.) and *Calopteryx virgo meridionalis* Sel., but the lack of species diversity was compensated by the immense numbers of individuals, especially of *B. irene*. Both forms of female were present, i.e. the so-called "normal" form with very short anal appendages (f. *brachycerca* Navas) and the type form with long appendages, which is usually considered to be rare (P. AGUESSE, 1968, *Les Odonates de l'Europe Occidentale*, Masson, Paris). The two forms are very distinct: appendage lengths are about 2 and 6 mm respectively for the two forms.

O.-P. WENGER (1959, *Mitt. schweiz. ent. Ges.* 32: 304-311) showed that *B. irene* larvae can be readily separated into the two forms by examination of the lengths of the cerci. Also P.-A. ROBERT (1958, *Les libellules (Odonates)*, Delachaux & Niestlé, Neuchâtel), in his description of the larva, says "les app. sup. (cerci) atteignent le tiers ou les trois-cinquièmes des cerques chez la ♀ . . .". I found separation of the female exuviae using this method to be very straightforward; if the cerci were appreciably less than half the length of the paraprocts the specimen was f. *brachycerca*, if they were appreciably more than half the length of the paraprocts the specimen was the "long appendage" form. No doubtful intermediate specimens were found.

A total of 22 exuvial skins were collected from the Vis, mostly from tree-trunks and moss-covered rocks in the river. The R. Vis flows into the R. Hérault near Ganges and a further exuvial collection was made on the Hérault downstream of Ganges at Causse de la Selle (Dép. Hérault). Two exuvial collections were also made on the R. Célé (Dép. Lot) about 160 km to the NW of the Vis by D. Chelmick in 1979 and by myself in 1981. The Célé and its odonate fauna has been described by M.A. LIEFTINCK (1965, *Tijdschr. Ent.* 108: 41-59).

Dr M. Ferreras Romero of University of Cordoba (in litt.) kindly supplied me with data from larvae collected in Andulasia, Spain; the 15 ♀ larvae examined were from the Guadalquivir river system (Arroyo Pedroches and Arroyo

AN UNUSUAL POPULATION OF *BOYERIA IRENE* (FONSC.) IN HÉRAULT, FRANCE (ANISOPTERA: AESHNIDAE)
In July 1979 I found a strong population of *B. irene* on the R. Vis, near Soutayrol, Dép. Hérault, France (G.S. VICK, 1980, *Bull. amat.*

Table I — The occurrence of the two forms of females in various populations of

Locality	♂	♀		% long ♀♀	Date
		short	long		
R. Vis, Hérault	7	6	9	40.9 (a)	28.VII.1979
R. Hérault, Hérault	3	3	4		25-30.VII.1979
R. Célé, Lot	20	0	17	3.6 (b)	18.VII.1979
R. Célé, Lot	11	1	10		29.VII.1981
Andalusia	—	0	15	4.4 (c)	1977-1978
Gerona	33	2	30		1954-1957

del Molino).

The results of these small surveys are shown in the table together with those obtained by WENGER in NE Spain (Llagostera, Gerona). The proportion of exuvial skins of the "long appendage" form is expressed as a percentage of the total number of female skins that were collected in each region, viz. (a) Vis/Hérault, (b) Célé, (c) Spain. Using the null hypothesis that the difference between results (a) and (b) is due to chance:

$$\chi^2 = 401 (\nu = 1) \text{ and } p \ll 0.001.$$

Similarly comparing results (a) and (c):

$$\chi^2 = 317 (\nu = 1) \text{ and } p \ll 0.001.$$

So it appears that the R. Hérault and its tributary the R. Vis contain a population of *B. irene* in which there is a significantly higher proportion of females with long anal appendages than is found at the other localities. Actual collecting experience with the adult insect would suggest that the results (b) and (c), i.e. that the long appendage female form is infrequent, represent a "normal" situation and that the Vis/Hérault population is unusual. The reason for this is not clear as neither river seems to be at all exceptional when compared with many other rivers in S. France; indeed the Vis and Célé are very alike in most respects. I should be very interested to hear of any other localities which hold high proportions of this female form.

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