Acta Entomologica Fennica 1981. 38:50-51.

Reproductive isolation in the genus Javesella Fenn.

P. W. F. DE VRIJER

DE VRIJER, P. W. F. 1981: Reproductive isolation in the genus Javesella Fenn. — Acta Entomol. Fennica 38: 50—51.
Author's address: Laboratory of Entomology, P.O.Box 8031, 6700 EH, Wageningen, Netherlands.

1. *Pre-mating isolation*

The study of pre-mating isolation between the Dutch species of *Javesella* has so far been concentrated on host-plant relations and acoustic behaviour.

1.1. *Host-plant relations*

The data from experimental studies and field observations are summarized in the following table:

Species	Preferred host-plants
Javesella discolor	Deschampsia flexuosa
	Deschampsia cespitosa
	Poa nemoralis
	Holcus mollis
Javesella dubia	Agrostis stlonifera
	Agrostis tenuis
Javesella forcipata	Poa annua
	Poa pratense
Javesella obscurella	Alopecurus geniculatus
Javesella pellucida	— polyphagous —
Javesella salina	Triglochin maritima

Javesella salina has so far not been found in the Netherlands: the population studied is from Münzenberg, Germany.

1.2. *Acoustic behaviour*

Although all the populations studied so far show a certain degree of individual variation, their basic patterns of acoustic performance exhibit a remarkable intraspecific uniformity. Interspecific differences are clearest in the males (Fig. 1), but some interspecific differentiation is also present in the females.

The primary function of acoustic communication is to bring potential mating partners together (recognition, attraction, orientation) and to lead them (through courtship) to successful mating. Therefore differences in acoustic repertoire between populations may eventually result in the inability of their members to achieve successful mating.

In preliminary "play-back" experiments the response of females to calling songs of males of other species was lower (but still considerable) than their response to conspecific males.

An interesting question is whether differences in the acoustic repertoire of *Javesella* species are the primary cause of species divergence, or merely a byproduct of it. More insight into this matter may be obtained from studies on 'species' showing lower levels of phenetic and/or genetic divergence.

2. *Post-mating isolation*

Both host-plant relations and acoustic behaviour constitute a strong barrier to interspecific mating of *Javesella* species in the field. In the laboratory, however, species can be manipulated to hybridize. So far only a few combinations have been tested, but some of them produced viable hybrids. These hybrids failed to produce offspring in backcrosses and their gonads were undeveloped.

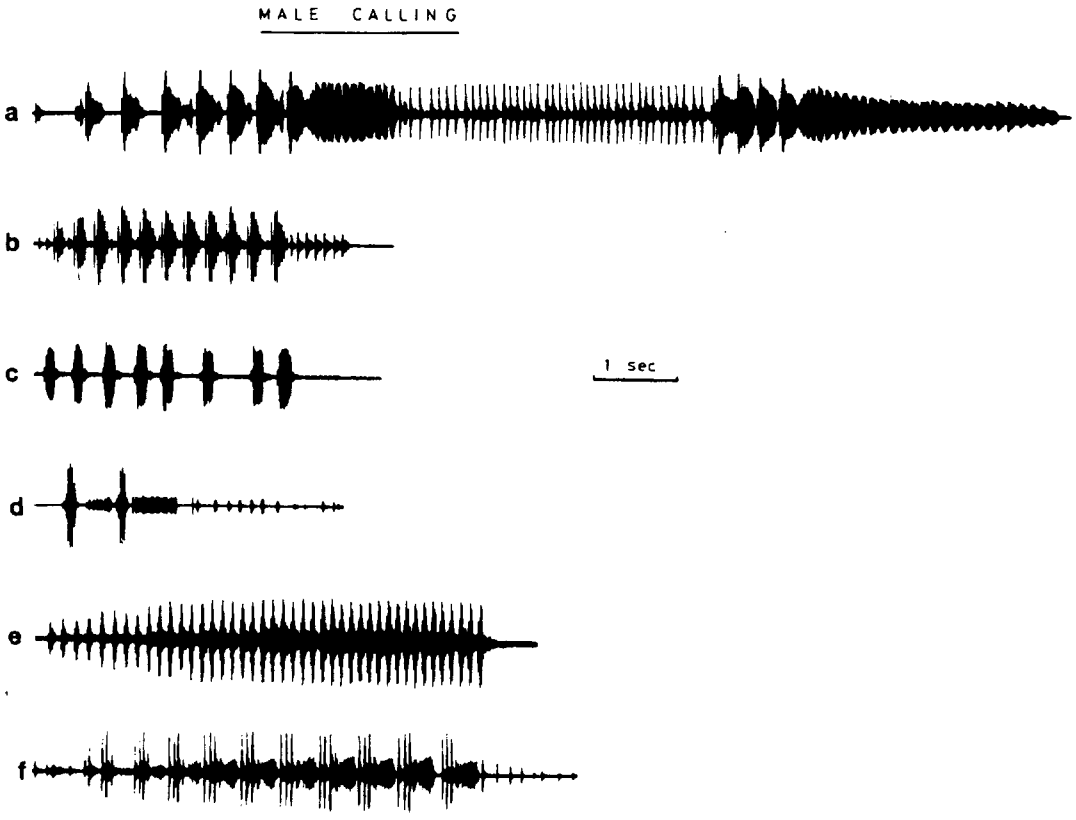

Fig. 1. Sonograms of the male call in *Javesella* species. a — *J. pellucida*, b — *J. dubia*, c — *J. obscurella*, d — *J. salina*, e — *J. discolor*, f — *J. forcipata*.