

SHORT COMMUNICATION

Aggregation behaviour in *Philonthus cognatus* Stephens (Col.: Staphylinidae), at Burnt Wood, Staffordshire—On the morning of 3 and 4. ix.1998 whilst undertaking a survey of the epigaeal beetle fauna at Burnt Wood, Staffordshire (SJ736534), I observed a mass aggregation of beetles, *Philonthus cognatus* (Col.: Staphylinidae), on the low vegetation adjacent to one of the rides bordering an area of coniferous plantation woodland (*Pinus* sp.). Walking a 30 m transect along the ride I recorded 616 of what appeared to be, and later proved to be, individuals of the same species of staphylinid beetle at rest on low vegetation. They were aggregated at a height of no more than 40 cm, particularly on *Rubus fruticosus*, *Dryopteris affinis* and the low sward of mixed common grasses, with some individual pieces of vegetation yielding between 40–50 individuals.

Even the slightest contact with the vegetation initiated a mass escape response whereby all the beetles spontaneously dropped to the ground amongst the dense vegetation. Adding these escapees to the recorded figure would produce an estimate of numbers in excess of one thousand along this transect. This aggregation behaviour was also observed at two other locations within the reserve, one on the opposite side of the ride, and one on an adjoining ride, giving an overall estimate in excess of 2,500 individuals. These figures were surprising as in the previous three months, whilst pitfall trapping a number of areas within the reserve, the overall total of carabid, and staphylinid beetles trapped had numbered less than 500 individuals.

Aggregation behaviour has been observed in other staphylinid species on the continent, particularly in *Stenus* spp., with occurrences also recorded for some Aleocharinae and Omaliinae (Lecoq, 1991, 1993; Orousset, 1993). *Agonum dorsale* Pontoppidan (Col.: Carabidae) have also been observed in aggregations, overwintering in the base of hedgerows in the south of England (N. Sotherton, *pers. comm.*), and although as yet there is no positive evidence as to why this occurs, it is possible that an aggregation pheromone is responsible for initiating this behaviour. However, this did not appear to be a typical overwintering aggregation, and the lack of physical contact between individuals suggests that this was not mating behaviour either. *P. cognatus* are however voracious predators of aphid species (Dennis & Wratten, 1991) and therefore it is possible that this aggregation is linked to prey searching behaviour, although there is as yet no evidence to support this hypothesis, leaving this behaviour, to date, unexplained. Thanks to Jonathan Webb of the Staffordshire Wildlife Trust for his assistance in confirming the beetle determination.—PHILIP J. SMITH, 437 Stone Road, Trentham, Stoke-on-Trent ST4 8NG & MARK R. WEBB, Biology Division, School of Sciences, Staffordshire University, College Road, Stoke-on-Trent ST4 2DE.

REFERENCES

- Dennis, P. & Wratten, S. D. 1991. Field Manipulation of Populations of Individual Staphylinid Species in Cereals and Their Impact on Aphid Populations. *Ecological Entomology* **16**(1): 17–24.
- Lecoq, J.-Cl. 1991. Observation d'un Comportement Rare Chez un Staphylin: Le Grégarisme (Col.: Staphylinidae). *L'Entomologiste* **47** (3): 173.
- Lecoq, J.-Cl. 1993. Grégarisme des Staphylin: Suite (Col.: Staphylinidae). *L'Entomologiste* **49** (1): 38.
- Orousset, J. 1993. Note De Chasse. Compliments D'Information Concernant le "Grégarisme" Chez les Staphylin. *Bulletin de Liaison de L'Association des Coleopteristes de la Region Parisienne*, 17th Septembre 1993, **17**: 50.



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