

what appears to be a fairly well defined way, the characters necessarily chosen are probably interdependant manifestations that may be related to total body size as Wilson suggested. In this respect fig. 1 is the more reliable in that it shows that when the three species are segregated according to appendage pilosity and other characters, gaster hair length is clearly not related to body size, i.e. head width, and can be used as a true guide to separating the species.

Wasmann is quoted in Donisthorpe (1927) as stating that intermediates between *L. umbratus* and *L. mixtus* are as common as the types. Donisthorpe himself, however, gave remarkably few examples for this intermediate category. I have had the opportunity of examining some of his doubtful specimens in the British Museum, the Leicester City Museum, the National Museum of Wales and the Oxford University Museum. These include typical *L. mixtus* queens with no appendage hairs from Bletchington and Woodeaton labelled *L. umbratus*, a typical *L. mixtus* worker from Snave Bridge, S.W. Ireland, labelled *mixto-umbratus*; a queen from Seaton labelled *mixto-umbratus*, which I would have named *L. umbratus*—the specimen has long subdecumbent appendage hairs—and several queens, males and workers from Porthcawl and Weybridge labelled *mixto-umbratus* which are in fact *L. rabaudi* Bondroit, a species not then recognised by Donisthorpe. I myself recorded '*mixto-umbratus*' from Worcestershire, but these were males and queens flying to light on successive evenings. They divide straight-forwardly into *L. mixtus* and *L. umbratus* and there was no reason to suppose that they came from the same colony. It will be seen, therefore, that some of the early captures were misidentified and some at least of the few intermediates so recorded by Donisthorpe were another species.

There are, however, series that are sufficiently intermediate that it becomes a matter of opinion as to which species they belong. Thus some queens, in the Oxford Museum from Shotover, are labelled *umbratus*, but recorded as *mixtus* by Donisthorpe. These have a rectangular scale, many genal hairs, scattered appendage hairs and are dark in colour. That is, they are darker in colour and have fewer appendage hairs than normal *L. umbratus* while the petiole scale, but no other feature, is reminiscent of *L. rabaudi*. Similar series of queens from Heston and Osterley are present in the British Museum collection. I have also seen the odd queens in the Copenhagen Universitets Zoologisk Museum, through the courtesy of Mg. C. Bisgaard, that have relatively long gaster hairs but very few appendage hairs and are somewhat intermediate between the two. In my own collection, I have what I regard as *L. mixtus* with occasional suberect tibial hairs and *L. umbratus* with a reduced number of such hairs. However, these with the Shotover queens include only 5 series out of the 100 that I have been able to study. Wilson included the North American '*aphidicola*' in his conception of *L. umbratus*. This entirely lacks appendage hairs and in this respect shows no variation whatever