

*microgyna* groups when they enter nests of *F. fusca* and *incerta*. Wasmann (*loco citato*) accepts the interpretation given by Emery and Forel, and now recalls that he has on several occasions found mixed colonies of *L. umbratus* and *fuliginosus*. Donisthorpe<sup>1</sup> states that in 1897 he recorded the occurrence of a large colony of *fuliginosus* in a hollow tree at Lymington, England, living with what he believed at the time to be *L. flavus* but has since decided must have been *umbratus*. He also says that Crawley has recently found *umbratus* workers in company with *fuliginosus*.

But even this is apparently not the whole story. Crawley<sup>2</sup> found that the queen of *umbratus* may be adopted by a colony of *L. niger*, and Wasmann (*loco citato*) has shown that the former ant is, at least occasionally, a temporary parasite on *niger*, for he found a mixed colony of the two species which could only be interpreted on this supposition. He believes, therefore, that we may have here a case of social hyperparasitism—*umbratus* founding its colonies with the aid of *niger*, and *fuliginosus* with the aid of *umbratus*! In these observations it is, of course, the female of the European *fuliginosus* which exhibits temporary social parasitism, and if *spathepus* is really the  $\beta$ -female of this species, it is also, in all probability, addicted to the same form of parasitism, perhaps on some other species of *Lasius*, although *umbratus*, as I have stated, is known to occur in Japan.

Thus it appears that in the old world the genus *Lasius*, like the genus *Formica*, is made up of two sets of species—one extremely abundant and widely distributed, with queens able to establish their colonies independently, the other rare and sporadic in their occurrence, with queens that require the assistance of workers of other species of the genus when engaged in founding their commonwealths. To the former set belong *L. niger* L. and its various subspecies (*alienus* Förster, *brunneus* Latr., *emarginatus* Fabr., *lasioides* Emery) and *L. flavus*; to the latter *L. umbratus* Nyl., and its subspecies *mixtus* Nyl., *bicornis* Förster and *affinis* Schenck, *L. carniolicus* Mayr and *fuliginosus* Latr. The great rarity of *carniolicus* and the very small size

<sup>1</sup>"On the Founding of Nests by Ants; and a few notes on Myrmecophiles." *Ent. Rec.*, XXII., No. 4, 1910, 4 pp.

<sup>2</sup>*Ent. Month. Mag.*, 1909, p. 94.