latter, as Prof. Wheeler quaintly remarks, are as rare as "hens' teeth" when one starts to look for them. As to the former, I have personally never seen or come across a marriage flight of either rufa, sanguinea, or eusecta. I therefore made up small colonies of fusca and rufibarbis v. fusco-rufibarbis by putting a limited number of ♀♂ and pupae into a combined Fielde and Jannet nest, and introduced ♀♀ of F. sanguinea. I used both old dealated, and doubtless impregnated, ♀♀, and young winged virgin ♀♀, taken from sanguinea nests. From the latter I removed the wings, as Wheeler has shown that when the wings are removed the ♀ acquires the instincts of an impregnated female.

Before describing my experiments, I must mention that I kept sanguinea ♀♀ in bowls of sand for months, alone and together, and they never attempted to lay eggs or start a colony. When, however, a few pupae, of this or another species, were introduced, they sometimes collected them together and sat upon them.

No. 1. A small nest of F. fusca ♀♂ and larvae taken at Sherwood Forest on June 13th. On June 24th I introduced a ♀ sanguinea, which I had taken from a nest at Aviemore on May 17th. She still retained one wing, which I removed. The fusca ♀♂ ran away at first when the ♀ approached them, but later attacked her. The ♀ bit at the fuscas when attacked. In the evening they were still fighting. The ♀ did not pay any attention to the larvae and did not try to conciliate the ♀♀, but ran away from them. By June 25th ♀♀ had been killed by the ♀, and the rest were in the passage between the two compartments with the larvae. June 27th, ♀ still attacked a little, several more ♀♀ killed. I introduced some large niger pupae, which the fuscas collected with their larvae. On June 28th, the ♀ appeared to be accepted by the ♀♀, as they were all sitting together, and several ♀♀ were cleaning the ♀. On July 2nd, the ♀ was dead, no doubt from injuries received in the previous encounters.

In this experiment the ♀ was finally accepted by the ♀♀, although she died from injuries received.

No. 2. July 4th, introduced dealated ♀ sanguinea, taken at Woking, May 5th, into small fusca nest with pupae. The ♀ approached the pupae and tapped them with her antennae, evidently much interested in them. The ♀♀ removed them, but the ♀
was little attacked and repulsed ♂ ♂. I gave them a little honey, and the ♂ and ♀ ♀ fed side by side. July 5th, the ♀ had collected all the pupae into a corner and sat on them, 2 ♀ ♀ were with her, but several others were dead and injured. July 6th, ♀ on guard over all the pupae in one corner, all ♀ ♀ killed but 3. These try to remove pupae one by one. ♀ brings them back again. I introduced some pupae and larvae from a fusca nest from Weybridge. ♀ collected them all together into her corner. July 15th, only 2 ♀ ♀ left, quite friendly with ♀, all sitting together on the pupae. July 18th, all well and friendly together.

This experiment was quite successful, the ♀ took possession of the pupae, killed ♀ ♀ when attacked, and eventually became friendly with the remaining two.

No. 3. On July 12th Mr. Hamm sent me up a small fusca nest from Shotover. It contained many pupae, ♀ ♀ and 2 Ateneles larvae. I placed them all in a combined Field's and Jannett nest. July 15th, introduced a deëlated sanguinea ♀ taken at Woking, May 9th. The ♀ was at once fiercely attacked by the ♀ ♀. She was not very aggressive herself when attacked. In the afternoon she was still being attacked, and held by her legs and antennae by many ♀ ♀. July 16th, ♀ no longer attacked, but has lost an antenna. July 17th, ♀ not attacked, in corner by herself. July 18th, ♀ dead.

In this experiment the ♀ took no notice of the pupae, did not resist much when attacked, and finally died from injuries received. One difficulty in these experiments is that it is not possible to provide a means for the ♀ to escape, if she wished to do so, as she could in nature.

No. 4. July 15th, Mr. Keys sent me up several F. rufibarbis v. fusco-rufibarbis nests from Whitsand Bay. July 17th, introduced deëlated sanguinea ♀ taken at Aviemore, May 17th. She approached the pupae, when she was fiercely attacked by the workers, and killed the same day.

No. 5. Another rufibarbis v. fusco-rufibarbis nest. July 17th, introduced deëlated sanguinea ♀, also from Aviemore. Immediately attacked by 2 ♀ ♀, with which she fiercely grappled and killed both during the day. July 18th, ♀ dead!

Nos. 6 and 7. July 23rd, introduced virgin sanguinea ♀ ♀ (having removed their wings), taken at Bewdley, July 21st, into
two rufifarbvis v. fusco-rufifarbvis nests. Both ♀ ♀ killed the same day.

No. 8. July 23rd, introduced virgin sanguinea ♀, from Bewdley, having removed her wings, into a fusca nest. ♀ at once attacked and killed same day.

No. 9. July 23rd, removed the wings from a virgin ♀ sanguinea, taken at Bewdley, and placed her in a tin with some pupae. July 24th, introduced this ♀ into the fusca nest from Shotover. Attacked by 2 ♀ ♀, which she killed. Later ♀ captured some of the pupae and sat on them in a corner. The ♀ ♀ collected the rest of the pupae into another corner. Later ♀ injured another ♀, and killed one that fastened on to her leg, and captured more of the pupae. July 25th, all ♀ ♀ killed but one, ♀ sitting on all the pupae in one corner. July 26th, ♀ carrying pupae about and arranging in corner, where she sat upon them. I introduced a few rufifarbvis v. fusco-rufifarbvis ♀ ♀ into the nest. When these approached the pupae the ♀ sprang forward and seized them and shook them as a terrier shakes a rat, and killed them all.

This experiment was quite successful. The ♀ killed all the ♀ ♀, and took possession of all the pupae.

No. 10. July 25th, introduced virgin ♀ sanguinea, from Bewdley, into a rufifarbvis v. fusco-rufifarbvis nest. On July 23rd I had removed the wings and placed her in a small dark tin with a few pupae. ♀ was attacked and killed in two hours.

No. 11. July 25th, introduced a virgin ♀ sanguinea, from Bewdley, which had been treated like the last one, into a rufifarbvis v. fusco-rufifarbvis nest. ♀ attacked and killed several ♀ ♀. July 26th, ♀ dead.


No. 13. July 28th, separated 6 rufifarbvis v. fusco-rufifarbvis ♀ ♀ with pupae into one compartment of nest. August 9th, introduced virgin ♀ sanguinea, from Bewdley, which had shed her wings. Immediately attacked by 2 of the ♀ ♀, and killed the same morning.

It will thus be seen that in no single case was a ♀ sanguinea accepted by rufifarbvis v. fusco-rufifarbvis ♀ ♀, the ♀ always being killed, and generally the same day she was introduced. This ant is a much bolder race than pure fusca, the latter being a timid and cowardly species. In
nature when a *fusca* nest is disturbed, the ants immediately scatter and run away, all disappearing in a very short time. This is by no means the case with *rufibarbis v. fusco-rufibarbis*.

In future for further experiments I shall only use *fusca* ♀♂, and shall next try ♀♀ of *F. rufa*.

The two successful experiments with *fusca* show that it is quite possible for a *sanguinea* ♀ to start a colony in this way, but it seems rather a precarious method to depend upon.

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