Piper

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PRINCETON, NEW JERSEY 08544

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Dr. Matthew Meselson
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Dear Dr. Meselson:

I have just received your letter of 3Ø September. It arrived in Bangalore after I left India, and was forwarded to Delhi (where the Fulbright office is located), then to my parents' address in Ohio, and finally here to Princeton. I had never received your letter of 9 September, the copy of which was enclosed. Sorry not to have been able to supply the other samples that you requested in these letters. Fecal samples were relatively easy to collect, and I could have obtained data on defecation behavior had I known you wanted it. I hope that what I did send was useful for your chemical analyses at least.

Regarding your question about the pollen content of the feces (9 September), it is indeed possible that bees that defecate on the same flight have eaten different pollens stored in the nest. Pollen gathered at the same time is generally stored in the same part of the nest. Since different floral species are abundant at different times of the flowering season, a comb typically shows a patchwork of stored pollen types. This is true of Apis mellifera as well as of the Asian species. Bees that ate pollen stored on different shelves of the pantry would produce quite different feces on a given day. Another point to consider regarding the seasonal segregation of flowering by different plant species is that the fecal spots distributed around a colony could be quite variable in age, and could therefore reflect the entire spectrum of pollens produced during the flowering season, even if feces only contained pollen from plants flowering at the time of defecation. Hence, pollen in feces deposited yesterday might be very different than that in feces deposited months ago on the same bit of vegetation by bees from the same colony. Though I tried to find what looked like relatively fresh samples (in the hope that the composition was only minimally affected by rainfall), I could not know the age of the samples that I collected. Those who have collected Yellow Rain samples might have been less discriminating about new vs. obviously old specimens.

I am not surprised by the high proportion of grass pollen in the A. cerana samples. As I indicated when I sent them, they came from a city far from any undisturbed forest habitat. And since I collected them in the peak of the rainy season, most tree species had long finished flowering, but grasses and other herbaceous plant were springing up in abundance.

I have some samples of pollen collected from foragers that had just returned to the nest. These come from A. dorsata, and I collected them for a different purpose during a study of nocturnal foraging by this species. I have yet to analyze them myself for composition, and would not want to part with all of them, but I would be willing to give you some of each bee's pollen load if you still

want it. I warn you, though, that it is not clear how much of a colony's foraging is done at night, nor can one necessarily say that nocturnal and diurnal pollen-collecting behavior are identical, so these samples may be biased by any differences that might exist.

Sincerely,

Fred C. Dyer.

P.S. Please let me know if there is anything else I can do for you