

12 June 1930.

Major L. Darwin,
Cripps's Corner,
Forest Row,
Sussex.

Dear Major Darwin,

Many thanks for your letter. As a matter of fact Salisbury's letter had stirred me to a criticism a copy of which I enclose; it is very much on the lines of your letter, but sticking closely to one central point, in the hope of making it at least clear.

I like immensely your point that the theory of individual development depends on genes acting differently in different circumstances. I was surprised, too, at the calmness with which Cunningham assumes that all the structure and instincts of worker bees could be ascribed to their solitary ancestor. There is a whole series of reactions connected with swarming, the location by scouts of a new site, the instinct to follow the scouts, and to guide the queen's flight, the swarming itself, the preliminary gorging with honey, which seems to be unknown in existing solitary bees, and very improbable in ancestral ones. There then is the whole set of behaviour mechanisms which Frisch has found by which news of new food

sources is conveyed and acted upon always by workers. The only loophole for the Lamarckian here is the possibility of social organisation prior to the development of a neuter caste. However, the objection is so obvious that Cunningham ought to have discussed it.

I am wondering if any biologist will follow the argument of the first chapter. First, because a first chapter is always expected to be not only elementary but trite, and secondly because we have all grown up in the greatest confidence that we know all about what Darwin meant. I am very tired of having some excessively loosely expressed truism such that "all defective deer must be devoured by tigers" put forward as "the ordinary Darwin^{ian} argument", and I believe now I ought in the preface to have hammered in the statement that in biological circles Darwin's views are usually grossly misconceived - though this would annoy many people.

Yours sincerely,