at the present time not only superfluous, but misleading. According to prevailing theory, all ant, wasp and honey-bee colonies would be determinate, since it is supposed that they can not produce females after the reproductive exhaustion or death of the queen. And, for aught we know to the contrary, the same may be true of the termites. Until we are sure that this is not the case, we gain nothing but confusion by adopting such a classification.

Equally futile is his distinction between the 'social principle of matriarchy' and 'ergatarchy' among the social insects. As a member of a colony, the female ant, wasp or humble-bee is no more a ruler or dominating factor in social life than the queen honey-bee. If the female ant, wasp and humble-bee display great initiative in founding their respective colonies, the female honey-bee displays it by killing rival queens, returning to the hive after the nuptial flight, etc.

The following remarks quoted at random from Dr. Cook's paper show the care with which he has studied the literature of his subject. At p. 9 (foot-note) he says:

> With these fungus-cultivating ants and termites, at least, it would seem that a new colony can scarcely be founded by a pair of sexual termites or by a single fecundated female ant unless they carry their domesticated fungus with them. It is possible, however, that in both cases the newly mated insects are adopted and set up in housekeeping and farming by workers of their own species, who bring 'spawn' of the fungi from the older colony with which they are in communication. This might the more readily happen because long subterranean galleries are a prominent feature of the architecture of the fungus-growing insects, both ants and termites.

Although nothing is known concerning the origin of the fungus gardens among termites, von Ihering, in an article[3] which should be

[3] 'Die Anlage neuer Colonien und Pilzgärten bei Atta sexdens,' *Zool. Anzeig.*, Bd. 21, 1898, pp. 238–245, 1 fig.