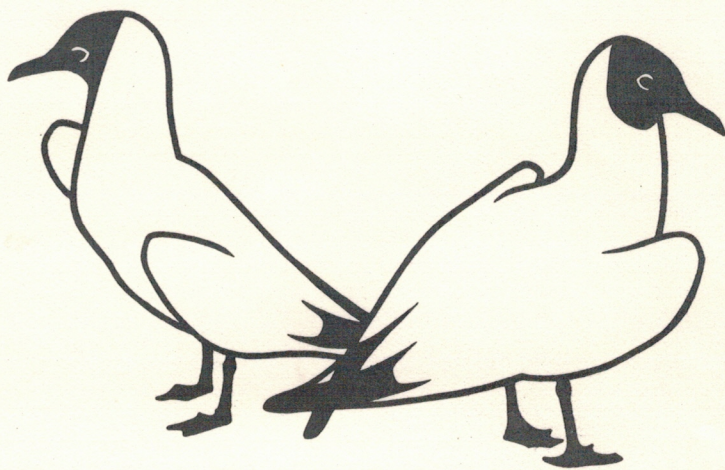


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ABSTRACTS

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LENOIR

POLYETHISM AND SPECIALIZATION OF BEHAVIOUR IN THE ANT LASIVS NIGER (L.)

A. Lenoir and H. Ataya

The experiment was conducted in the laboratory with five young colonies comprising 225 ants individually marked with a number stuck on the abdomen. We observed with a binocular microscope the following behaviours: feeding, licking and handling brood, food exchanges between adults, inter-individual grooming, foraging and food-retrieval in the outside nest, transporting sand, waste and corpses, brood-retrieving, exploration of a new foraging arena, defensive behaviour and removing sand blocking the nest entrance. Twenty-four behavioural parameters were so noticed for each individual. A total of 25-30 hours observations was necessary for each colony.

Data have been treated by correspondence analysis, a form of principal component analysis. The first factor leads to distinguish 2 groups of behaviour associated either with inside nest service (brood nursing ants) or outside nest service (foragers). The second factor is opposing two types of behaviour in the outside nest: transporting material or exploring. The ants of the first group are associated with the entrance of the nest, throwing out sand and waste, and removing sand blocking the nest entrance. The ants of the second type are foragers specialized in exploring new arena. We recognize several groups of ants: nurses exclusively employed to brood care (42% of ants), foragers employed to any outside task (11%), carriers of material (8.5%) and explorers (8.5%). Between nurses and foragers we find intermediates less active or inactive (34%).

Generally, in adult colonies, authors find two or more castes of nurses. We find here only one: it is the situation of young societies with only one cell for queen and brood, and nurses do not specialize. For outside nest tasks we observe simultaneously a great specialization for some individuals (carriers or explorers) and a great plasticity of other foragers available for any task. It is a system optimized for exploitation of the available space (here artificial nest).