

During recent studies we have established that the form and position of the propodeal spiracles and the shape of the frontal carinae are good enough to separate both genera unequivocally, but the characters are difficult to describe or perceive. During the survey several new characters were discovered, which allow us to distinguish between *Formica* and *Lasius* easily and definitely. These characters include the construction of the first gastral segment, the articulation of the petiole with the alitrunk and the distribution of setae on the hind tibiae.

These new features are offshoots from a project to discover strong new characters with which to redefine the genera and species-groups within the Formicinae.

Descriptions

The analysis is mainly based on material available at the British Museum (Natural History), London, and includes representatives of all the genera (and most of their included species-groups) of the subfamily Formicinae.

To observe the new characters, the ants must be mounted at the tip of a card-triangle, so that only the pro- and mesocoxae are glued down, leaving the petiole and gaster freely projecting and not at all obscured. It is also best to have the hind coxae directed forward or at least sideways, so that the petiole and gastral base are fully exposed.

First gastral segment (Figs 1, 2). The first gastral segment (= the third true abdominal segment) consists of a smaller sternite and a larger tergite. The tergite overlaps the sternite and also overlaps the base of the second tergite posteriorly. They are linked by interscleritic membranes which allow the expansion of the entire gaster for storage and transport of liquid nutrition. Anteriorly the first tergite is downcurved and narrowed, terminating in a reduced pretergite (= helcium (Figs 1, 2)), which is inserted in the posterior foramen of the petiole. The helcium, the gastral part of the joint, is dorsally collar-shaped in front view, forming a three-quarter arc arising from the lowermost anterior part of the tergite. The ventral sclerite of the helcium is an insignificant looking, small plate. In its general state this is a part of the sternite, and has one or two groups of proprioceptor sensillae (for definition and discussion see Bolton (1990)). Apart from the presternite the main part of the sternite is a simple plate, slightly bent dorsalward.

The spiracles of this segment are set towards the anterior ventral edge of the tergite.

The structure of the first gastral segment of *Formica* and *Lasius* is very distinct. In both the helcium is set low down on the anterior face of the gaster, but this is achieved in a different way in either genus.