THE ANTENNAL SENSILLA IN THE PRIMITIVE ANT *Dinoponera lucida* (FORMICIDAE, PONERINAE). José E. Serrão (1), Solange Marques-Silva (2), Cirlei P.G. Matiello (1), Jacques H.C. Delabie (3), Cléa S. Mariano (3).(1) Departamento de Biologia Geral, Universidade Federal de Viçosa, 36570-000 Viçosa, MG, Brazil. (2) Departamento de Biologia Animal, Universidade Federal de Viçosa, (3) CEPLAC, Ilhéus, BA, Brazil. jeserrao@ufv.br

The Ponerinae is considered one of most primitive ant group in the Neotropical region, because both morphological and behavioral pattern. *Dinoponera lucida* is the biggest ants of the world about 3 cm length, with predatory habits and without morphologic difference between queen and workers. *D. lucida* live in Atlantic rain forest in Brazil and it is in extinction process. The antenna in the insects is a major channel of sensory input, with many sensitive structures termed sensilla, being important in the interactions between the organism and the environment as well as between individual colony members. The studies presented focus on the morphology and distribution of sensilla in the antenna of *D. lucida*. The antenna were removed and submitted to standard procedures for scanning electron microscopy analyses. The antenna contains 12 antennomers including the scape. We found the following types of sensilla in the antenna (figure 1): *tricodea, basiconica*, *campaniformea*, *placodea* and *coeloconica*. Moreover, many pores had been observed in the antennal surface (figure 5), which are openings of exocrine glands. We found two types of sensilla *tricodea:* the longer ones with length about 140-160 μm are placed in the antennomers apex which play a role in mechanoreception (figure 2), whereas the shorter ones with length about 20-30 μm and enlarged base are placed in the entire antenna acting as chemoreceptors (figure 2). The sensilla *basiconica* (figure 3) were found in the apical portion of all antennomers and they function as chemoreceptors. The sensilla *campaniformea* (figure 4) were found in low number in the apex of all antennomers with a conspicuous array, forming group of few sensilla. These sensilla may play a role in perception of CO_2 concentration as well as water vapor and temperature. The sensilla *placodea* (figure 6) are present in all antennomers, but they are few and function as chemoreceptors, while the same distribution was found for sensilla *coeloconica* (figure 5), but these are water vapor receptors. This first detailed analysis of the antennal types of sensilla in *D. lucida* suggests an intricate sensorial apparatus of this ant to assure the communication and survival by identification of volatile and soluble substances in the environment as well as in interactions between specimens in their colonies.

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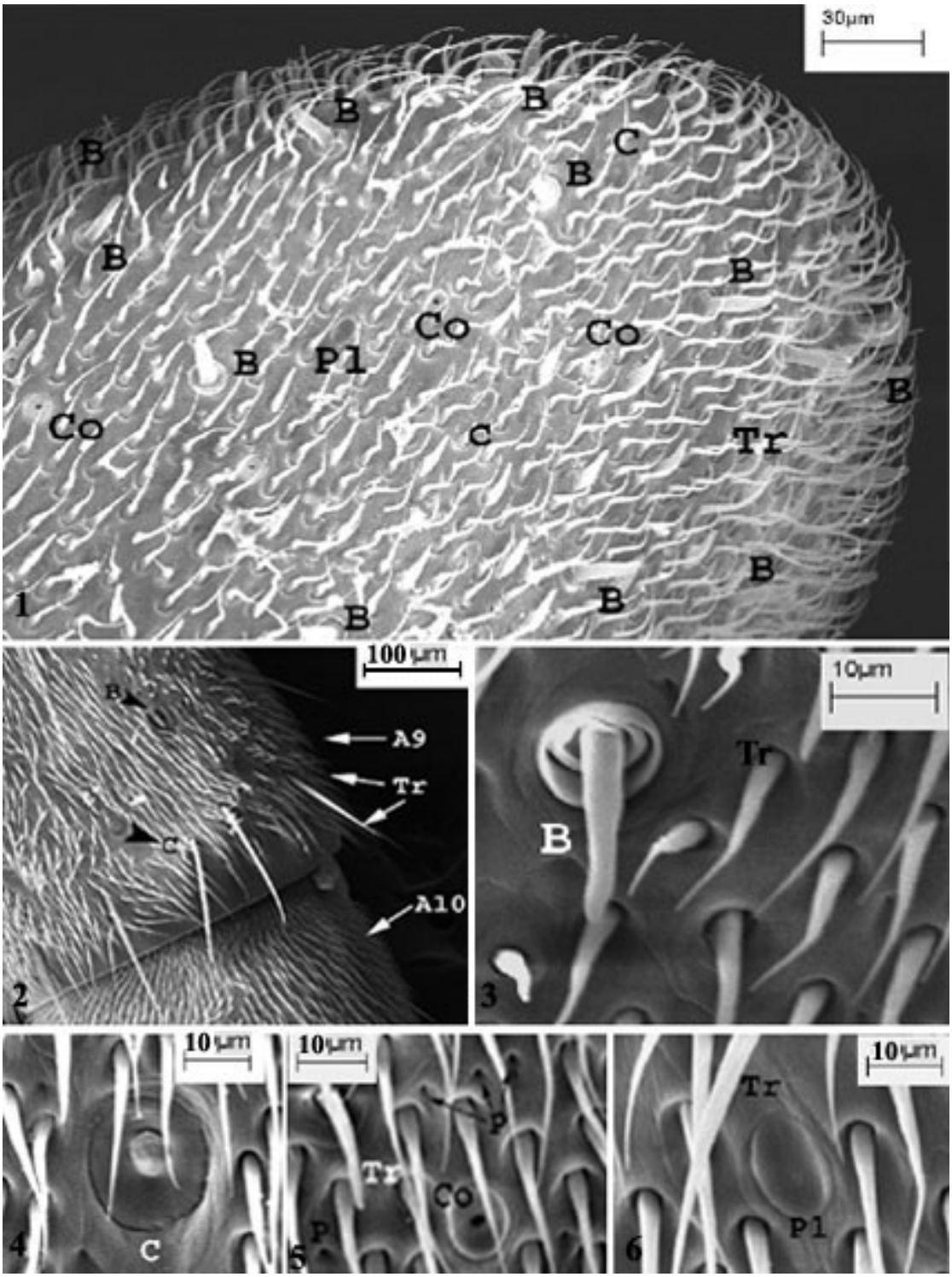

Figures 1-6. Scanning electron micrographs of antenna of the ant *Dinoponera lucida*. 1- Antennomer 12 showing the different types of sensillas. 2- Antennomers 9 (A9) and 10 (A10) showing long and short sensilla *tricodea* (Tr), sensilla *basiconica* (B) and *campaniformea* (C). 3. Detailed view of sensilla *basiconica* (B) and chemoreceptor sensilla *tricodea* (Tr). 4. Detailed view of sensilla *camapaniformea* (C). 5. Antennomer 8 showing sensilla *coeloconica* (Co) and exocrine gland pores (P). 6. Detailed view of senseilla *placodea* (Pl).