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Further Studies on the Occurrence of Natural Enemies of *Ips typographus* (Coleoptera: Curculionidae: Scolytinae) in Georgia

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Abstract: Natural enemy complex of the bark beetle – *Ips typographus*, a pest insect of *Picea orientalis* in Georgia was investigated. Their frequency in different elevation zones and different years in managed and unmanaged forests of Georgia was determined. The protozoan pathogen *Gregarina typographi* and microsporidium *Chytridiopsis typographi* were observed in the investigated beetles. While the gregarine was found each year and at every altitude investigated, the microsporidium was observed in beetles with a lower frequncy and not at every studied site. Additionally, a fungal pathogen *Fusarium sp.* in a low frequency was detected in part of the studied beetles. Nematodes were found free in the haemolymph and in the gut lumen as well but only one nematode species, *Contortylenchus diplogaster* could be identified. Larvae of the parasitoids *Tomicobia seitneri* and *Ropalophorus clavicornis* were also observed at different elevations. Predators *Nudobius lentus* and *Thanasimus formicarius* were detected in galleries of *I. typographus.* The amount of the pest larvae consumed by both species within twenty four hours was determined under laboratory conditions.

Key words: *Ips typographus,* pathogens, parasitoids, predators, Georgia.