SCIENTIFIC NOTE

The Tramp Ant *Hypoponera punctatissima* (Roger) (Hymenoptera: Formicidae: Ponerinae): New Records from the Southern Hemisphere

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A Formiga Exótica *Hypoponera punctatissima* (Roger) (Hymenoptera: Formicidae: Ponerinae): Novos Registros no Hemisfério Sul

RESUMO – A formiga exótica *Hypoponera punctatissima* (Roger), principalmente conhecida do Hemisfério Norte, é registrada pela primeira vez na América do Sul, no Estado de São Paulo, Brasil (22º43'S 44º08'W; 22º24'S 47º49'W) e na Ilha da Reunião no Oceano Índico (20°10'S 55°3'E). *H. puntatissima* possui a maior distribuição geográfica dos Formicidae, sendo presente em muitas ilhas continentais e oceânicas e em todas as regiões continentais com a exceção da Antártida e do Oriente. As razões do sucesso ecológico de *H. puntatissima* são discutidas.

PALAVRAS-CHAVE: Biogeografia, espécie introduzida, Brasil, Ilha da Reunion.

ABSTRACT – The tramp ant *Hypoponera punctatissima* (Roger), mostly known from the Northern Hemisphere, is reported for the first time from South America in the state of São Paulo, Brazil (22º43'S 44º08'W; 22º24'S 47º49'W), and Reunion Island in the Indian Ocean (20°10'S 55°3'E). *H. punctatissima* has the widest distribution within Formicidae, being present on many oceanic and continental islands and in all continental regions except Antarctica and the Orient. Reasons for the ecological success of *H. punctatissima* are discussed.

KEY WORDS: Biogeography, introduced species, Brazil, Reunion Island.

The tramp ant *Hypoponera punctatissima* (Roger), also known as Roger's ant, is reported as originated in western Europe (McGlynn 1999) or Africa. This ant belongs to a taxonomically confuse group which includes the taxa *gleadowi* and *ergatandria*, the latter has been sometimes considered as a synonym of *H. punctatissima* (Longino, unpublished), but the synonymy has not been confirmed by Kempf (1972) nor by Bolton (1995). The species was first described from hothouses in Germany (Roger 1859), where it was probably introduced during the first millennium of the Christian era (Seifert 1996). It appears that during that same period, it was also introduced in England (Timmins & Stradling 1993, Whitehead 1994). Although *H. punctatissima* is considered a warm stenothermic species (Whitehead 1994), living only where the temperature is no less than 21°C (Timmins & Stradling 1993), it has been recorded from several cold countries, as listed hereafter.

In Europe, the species is known from Belgium, Britain, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, Norway, Poland, Spain, Switzerland, and the Balkans (Holgersen 1943, Donisthrope 1946, Stradling 1965, Bernard 1968, Baroni Urbani 1971, Skott 1971, Kutter 1977, Espadaler 1983, Collingwood 1985, Timmins & Stradling 1993, Whitehead 1994, Dessart & Cammaerts 1995, Czechowski & Czechowska 1999). The species has also been reported from Arizona, Connecticut, Florida, Texas, and Wisconsin in the United States (Hunt & Snelling 1975, Deyrup & Trager 1986, Cokendolpher & Francke 1990, S. Cover & G. Alpert, personal communication). In Central America, Longino (unpublished) reports the ant from several localities in Costa Rica. On the African continent, *H. punctatissima* has been reported from Ghana, Guinea, Morocco, Nigeria, and Zaire (Room 1971, Kutter 1977, Bolton 1995). The species is also known to occur in the Middle Eastern countries of Saudi Arabia, Israel, Oman, and Yemen (Kugler 1988, Collingwood & Agosti 1996) and in Australia (Taylor 1987 in McGlynn 1999).

Apart from having a widespread continental distribution, *H. punctatissima* has also colonized several continental and oceanic islands. These include Madagascar in the Indian Ocean (where it is known from two subspecies [Bolton 1995]); Iceland in the Northern Atlantic (Olafsson & Richter

1985); Guadeloupe, Martinique, and St John in the Caribbean (Pressik & Herbst 1973, Jaffe & Lattke 1994); and New Caledonia, Hawaii, and Tahiti in the Pacific Ocean (Huddleston *et al.* 1968, Perrault 1987, Taylor 1987 in McGlynn 1999). It has been also found on a boat between Cuba and Trinidad (Kempf 1972).

With the possible exception of *Monomorium pharaonis* (Linnaeus) (Myrmicinae), which is essentially cosmopolitan, *H. punctatissima* has the most widespread distribution among members of the family. The list of countries from where *H. punctatissima* has been reported is almost certainly incomplete, as the species is cryptic or locally rare (Bernard 1968, Kutter 1977, Timmins & Stradling 1993) and hence difficult to collect. Compounding the problem, *H. punctatissima* is frequently identified only by its alate females caught during their dispersion phase, before or after mating (Kutter 1977, Collingwood 1985, Gray *et al.* 1995), being the males ergatogyne (Kütter 1977, Hölldobler & Wilson 1990). The rareness of this tramp ant at local levels is certainly an artifact due to its elusive habits. In northern countries, for example, *H. punctatissima* is found inside houses and greenhouses (Roger 1859, Stradling 1965, Olafsson 1985, Seifert 1996) where it seems to find ideal conditions and shelter from external low-temperature conditions. It is possible that for that reason *H. punctatissima* has been found in hospitals in England and Connecticut and Wisconsin (USA) sometimes forming large colonies (Gray *et al*. 1995, S. Cover & G. Alpert, personal communication).

Herein, we report *H. punctatissima* for the first time from South America and Reunion Island in the Indian Ocean. The South American records are as follows: Brazil, São Paulo State, #5082, Rio Claro, 22º43'S 44º08'W, 24.II.1996, one female, col. R.M. de Oliveira; Itirapina, 22º24'S 47º49'W, 21.III.1997, six females, beginning of dispersion flight, leaving nest (not observed) in chicken dung, col. J.H.C. Delabie & H.G. Fowler (deposited in the Laboratório de Mirmecologia collection, Convênio UESC/CEPLAC, Ilhéus, Bahia, Brazil). The record from Reunion Island is as follows: #5310, La Possession, 20°10'S 55°3'E, altitude 500 m, VIII.2000, one female and six workers, in rotten log on the ground, col. F. Blard (deposited in the Reunion Insectarium and in the collection of the Laboratório de Mirmecologia, Convênio UESC/CEPLAC, Ilhéus, Bahia, Brazil).

The reasons for the ecological success of *H. punctatissima,* at first approximation astonishing for an elusive species, should be found in its ability to take advantage of places with organic matter in decomposition, such as compost heaps (Whitehead 1994), media for earthworm cultures (Stradling 1965), horse dung (Timmins & Stradling 1993), horse stables (Forel 1874 in Kutter 1977), and chicken dung (see record above). It appears that the species follows human settlements since at least the end of the Roman period in cold Europe, as indicated by archeological data provided by Collingwood (1979 in Timmins & Stradling 1993) and discussed by other authors (Whitehead 1994, Seifert 1996). Timmins & Stradling (1993) suggest that horses have been responsible for the geographic expansion of *H. punctatissima* at least during the historic period, arguing that the ant species was certainly more common when horses were used as traction and carrying animals and, for that reason, the ant is today widely distributed in Britain, although always locally rare, being found mainly in horse stables. This hypothesis in turn suggests that *H. punctatissima* dispersed from or originated in Central Asia, native place of the domestic horse and other large herbivores, which have been domesticated early by man. However, the maintenance of permanent colonies of this ant in houses, greenhouses, and hospitals is much more recent, due to relatively constant temperature conditions in human settlements particularly since the Industrial Revolution. In tropical countries where *H. punctatissima* has been introduced, the species is locally rare, probably because its nesting environment is confined to decomposing matter and wood detritus close to human establishments where competitors may occur.

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