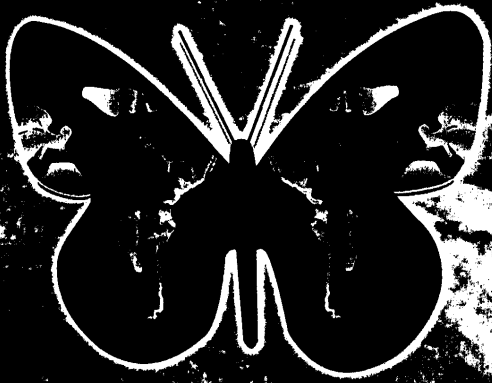


**Ministério
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D.F. Williams #3511



**XI
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XVIII Brazilian Congress of Entomology

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ABSTRACTS

The XI International Congress of Entomology is a joint promotion of:

Embrapa

BOOK II

[405] ANTS AS PEST IN HOSPITALS: A COMPARISON BETWEEN NORTHERN AND SOUTHERN HEMISPHERES

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In the northern hemisphere, ants which live in hospitals have been the focus of attention by entomologists over the last 40 years. The most complete inventories of urban ants which proliferate in buildings have been carried out in the United States (35-49 species), particularly in Florida and California. Except for in Brazil, reports on the number of species which can be responsible for serious public health problems are surprisingly few and are largely limited to the pharaoh's ant *Monomorium pharaonis* (L.) in Europe and the Argentine ant *Linepithema humile* (Mayr) in Chile, United States and Australia. *M. pharaonis* is as frequent in the hospitals of the south-east of United States (Florida and neighboring states), as *Camponotus pennsylvanicus* (De Geer) and *Tetramorium caespitum* (L.) are in the north-west of the same country. Furthermore, the ponerine *Hypoponera opacitissima* (Roger) seems to form stable populations in Connecticut and Wisconsin hospitals, as it does in Great-Britain. In Brazil, ants are the commonest visible organisms to occur in public health installations. A single hospital can reveal up to two dozen ant species. An older paper on ants in Bahia concerns fire-ants (*Solenopsis* spp) foraging on human carcasses in a mortuary and references to old Brazilian publications reveal a possible interrelation between ants and smallpox. In former-East German hospitals and in other countries, up to 30 types of pathogens have been identified as being associated with *pharaonis*. Several authors point out that *L. humile* can also transmit serious infectious pathogens of several diseases, including dysentery, typhoid fever and tuberculosis. In Brazil, 15 to 20% of the ants found in a large Sao Paulo hospital carried pathogens, and 50% of the bacteria found on the body of ants in another hospital were associated with the most ant *Tapinoma melanocephalum* (Fabricius). A range of pathogens have been identified from the bodies of ants found in these hospitals, mainly *T. melanocephalum* with 66.7% of the identified bacteria and *Paratrechina longicornis* (Latreille) with 11.1%. The larger the hospital is, the richer will be the ant community. Due to the richness of ants in public health services and the ability of ants to be vectors of a range of pathogens, the transmission risk is real and high; it is estimated that 1 to 2% of nosocomial infections acquired in the hospitals of Brazil may be attributed to ants. These infections may afflict 5 to 20% (generally less than 7%) of the patients after a surgical procedure in Brazilian hospitals. In the U.S.A., where ants have a negligible impact, the level of nosocomial infection is estimated to be between 3.8 to 5.7%.

Index terms: Formicidae, hospital, nosocomial infections, public health

[3407] HUMAN COMMENSALISM AND ECOLOGICAL INVASIONS OF NORTH AMERICAN EXOTIC ANTS

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Language provides the conceptual framework for our ideas. While many ant researchers around the world have settled on the same language -- English -- we still have trouble with a standard vocabulary for exotic ants. A variety of terms often are used interchangeably, but upon dissection these terms reveal significant ecological differences. Thus, our use of language has retarded our efforts to synthesize our work into a global understanding. Using the diverse ecological roles of the known exotic ant species of North America as an example, I propose a standard nomenclature for exotic ants to be shared by myrmecologists, reflecting the terms used by researchers of biological invasions among all taxa. "Imported" indicates species that have been transported into non-native habitat. I propose to use the terms "introduced," "exotic," "non-native," and "adventive" equivalently, for species that have been transported into a new region and can be found in the wild. "Invasive" and "invader" species are a limited subset of exotic species that expand their geographic range into natural areas, often to the detriment of native species. "Tramp" species may or may not be invasive, but do share large number of uncommon life history characteristics. I use the term "human commensalist" to describe an ant species that is closely associated with human environments. Some exotic species are very successful human commensalists, primarily occupying human structures. Invaders are found outside of human structures and invade into more natural habitats where they interact with native species. A small number of exotics are both successful in human structures and natural environments. Because the attributes that assist human commensalism are different from those that assist ecological invasions, we can learn more about invasions with comparative studies of ants fulfilling different ecological roles. Though we know much about the most problematic invaders, we are limited in our understanding of invasion processes because we have little natural history information about other exotic ants.

Index terms: Invasive species, non-native species, tramp ants, introduced ants.

[406] SOCIAL WASPS AS URBAN PESTS IN THE NORTHERN HEMISPHERE

T.P. McGlynn

ABSTRACT NOT RECEIVED

[3408] THE MANAGEMENT OF UNDESIRABLE ANTS IN THE URBAN ENVIRONMENT

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In the next 5 years, half of the world's inhabitants will be living in cities and more than 80% of the population growth during this time will occur in urban areas. Although there are over 9,500 species of ants worldwide, only about 40- 60 species of ants infest houses. In the future, there will be an even greater impact of undesirable ants on the urban environment. A 1992 study in the United States indicated that ants were the number one annoyance insect pests in households. The increase in problems can be related to the use of different pest control practices for other urban pests, the movement of pest ants around the world through international commerce, and a shift in dominant ant species due to urbanization. Ants cause numerous problems in the urban environment such as a nuisance resulting in undue stress, contamination by spreading disease-causing organisms, stings which can be life-threatening to some individuals, wood damage, damage to electrical equipment, computer equipment, roofs, and roadways. Urban pest ants can be very difficult to control. Most of these ant species produce "super colonies" with characteristics of multiple queens, non territorial resulting in a labyrinth of interconnected nests and very large populations. They build nests in a variety of locations and utilize numerous food sources which makes urban dwellings ideal locations. It is difficult to maintain long term control against these pest ants and because in many cases, the ant colonies are not eliminated completely, reinfestations occur rapidly. The habits of many undesirable ants in urban areas make control techniques utilizing sprays and dusts ineffective because the treatments may kill foraging workers, but they do not result in elimination of the colonies. Toxic baits relying on slow-acting toxicants, either alone or in combination with residual insecticides, are presently one of the best methods to control urban pest ants. It is important that the attractants used in the baits do not spoil quickly, a large quantity of the bait is available, especially when dealing with super colonies, and bait placement is where a large number of foraging workers will find it. There are several excellent active ingredients in use for urban pest ants such as hydramethylnon, fenoxycarb, abamectin, methoprene, pyriproxyfen, and boric acid. However, there is still a need to develop 1) new, more attractive and effective bait formulations and delivery systems; 2) control strategies for new pest ant species; and 3) multiple ant attractants, repellents and biorational methods of control.