

# BRAZILIAN APHIDOIDEA: I. KEY TO FAMILIES, SUBFAMILIES AND ACCOUNT OF THE PHYLLOXERIDAE<sup>1</sup>

CLAUDIO L. COSTA<sup>2</sup>, V.F. EASTOP e ROGER L. BLACKMAN<sup>3</sup>

**ABSTRACT** - Keys are provided for the identification of the families and subfamilies of Aphidoidea occurring in Brazil. Host plant and geographical distribution data of Phylloxeridae are also provided. The keys are illustrated by 67 line drawings. The check list of aphids occurring in Brazil indicates the presumed origin of each species. The origin of the Brazilian fauna is discussed.

**Index terms:** Brazilian Aphids, identification Keys, host plants, check list of Genera and Species, distribution.

## AFÍDEOS BRASILEIROS: I. CHAVES PARA FAMÍLIAS, SUBFAMÍLIAS E UMA CONTRIBUIÇÃO SOBRE PHYLLOXERIDAE

**RESUMO** - São apresentadas chaves para identificação de famílias e subfamílias de afídeos (Hemiptera, Aphidoidea) que ocorrem no Brasil. Apresentam-se também dados sobre plantas hospedeiras e sobre a distribuição geográfica da família Phylloxeridae. As chaves de identificação são ilustradas com 67 desenhos, e a lista classificada das espécies de afídeos que ocorrem no Brasil inclui a presumível origem de cada uma delas. Discute-se, outrossim, a origem da fauna brasileira.

**Termos para indexação:** Aphidoidea, afídeos brasileiros, chaves para identificação, hospedeiros, distribuição geográfica.

### INTRODUCTION

The works of Lima (1923) and of Moreira (1925) contain the first published reviews about the aphid fauna of Brazil. Oliveira et al. (1977) gave references to a number of early and little known papers on Brazilian aphids and listed species trapped in the state of Espírito Santo. Lima (1928, 1936, 1942), Silva et al. (1968), Bergamin (1957) and Costa et al. (1972) also listed species occurring in the country and provided some information on their host plants.

The importance of some aphid species as vectors of plant viruses has also been pointed out (Costa 1957, Costa et al. 1972). Worldwide, aphids are known to transmit more than 200 plant virus diseases. The effects of predators and parasites on the populations of aphid species, on vegetables and on fruit trees have been studied in the State of Paraná (Schmitt 1974, Bartoszeck 1976a, 1976b, Leal et al. 1976, Lark & Smith 1976, Pereira & Smith 1976a, 1976b, Pimenta 1976, Zúñiga-Salinas 1982).

Information on individual species or groups of pest species of different crops is available, especially from the southern part of the country, but a comprehensive systematic study of Brazilian species is lacking. Bertel's (1973) account of aphid

<sup>1</sup> Accepted for publication on August 3, 1992.

<sup>2</sup> Dep. of Fitopatol., Univ. de Brasília, CEP 70910 Brasília, DF. Fellow of CNPq.

<sup>3</sup> Department of Entomology, The Natural History Museum, Cromwell Road, London, SW7 5BD, England.

species from Rio Grande do Sul is of limited help for the identification of Brazilian aphids, as the species mentioned in the text do not correspond to the keys which were translated with some errors from Blanchard's (1939) excellent revision of Argentinian aphids.

The aim is to provide a means of identifying the aphid species from Brazil and to give information on host plants, geographical distribution and synonymy. This paper contains a key to the families and subfamilies and an account of the Phylloxeridae. Keys to Brazilian genera and species belonging to the other subfamilies have been prepared for publication in accounts of those groups.

Where possible, several different characters are given to discriminate similar species in the keys. This facilitates the identification of incomplete or damaged specimens from trap catches and food contaminants. These mini-descriptions also reduce the risk of confusing previously overlooked or newly introduced species with those already known in Brazil. The keys have been structured to facilitate the addition of further species.

The specimens studied are deposited in the British Museum (Natural History) aphid collection and in that of C.L. Costa in Brasília. Aphids have been seen from the States of Bahia, Ceará, Distrito Federal (Brasília), Espírito Santo, Goiás, Minas Gerais, Maranhão, Mato Grosso, Pará, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Santa Catarina and São Paulo.

The classification system adopted is that used by Eastop (1977) which recognized three families of Aphidoidea: Aphididae, Adelgidae and Phylloxeridae. Species belonging to 8 out of the 10 subfamilies of Aphididae are known in Brazil; none belonging to Pterocommatinae, Phloemyzinae or to Adelgidae have been seen. The wide-spread species of Phylloxeridae, *Viteus vitifoliae*, is recorded from Brazil.

The nomenclature adopted is that of Eastop & Hille Ris Lambers (1976) in their "Survey of the World Aphids" hereafter referred to as "Survey".

Of the 115 species of aphids known from Brazil, 18 are native South or Central American species, 5 others also occur in North America but probably occur here naturally. Most if not all the others were probably introduced by man on cultivated plants or weeds. Of these 92 introduced species 15 probably originated from North America, 42 from the Western Palaearctic region including the Mediterranean sub-region, 3 from subtropical areas adjacent to the Western Palaearctic, 5 from South Western Asia, 10 from southern Asia and 12 from the Eastern Palaearctic region. The remaining 5 species are of uncertain origin, being now widespread and without close relatives of a restricted distribution, and living on plants occurring naturally in several geographical regions.

The distribution of species within subfamily groups, including World and Brazilian Fauna, is given in Table 1. The 115 species known to occur in Brazil constitute only 2.8% of the known world fauna.

The information for each collection includes: State, locality, host plant or trap, date and (collector - leg).

Full synonymy is not given as it is readily available in the "Survey". Only synonyms that have been used in Neotropical region literature are given.

