

The distribution and abundance of animal species are crucial information for understanding population biology and evolutionary processes. In the drosophilid family, much attention is paid to successful species, which have variously been called widespread, dominant, ubiquitous, generalist, colonizing and cosmopolitan. "Widespread" species were recently defined by Parsons & Stanley (1981) as those that are abundant over large geographic areas: examples of such species are Drosophila subobscura in Europe and D. pseudoobscura in America. In an examination of the distribution of species known to occur in several biogeographic regions, David & Tsacas (1981) defined as "cosmopolitan" those which were established in at least three non-adjacent regions. In all, 21 species were found to fulfill this criterion and in every case, recent introduction due to their accidental transportation by Man appeared responsible for the present geographic distribution. Obviously, widespread and abundant species are more likely to colonize new continents. There is, however, no absolute correlation between the breadth of the ecological niche and the cosmopolitan status: some species, belonging for example to the genera Dettopsomya and Cacoenum, are neither abundant nor widespread but were transported by Man in spite of their ecological specialization.

David & Tsacas (1981) argued that involuntary transportations of Drosophila species were proceeding at an increasing rate and that several species, already established in two non-adjacent regions or in islands, could become cosmopolitan in the near future. Since that paper, some new establishments have been reported, the most spectacular being the spread of the European D. subobscura into Chile (Brncic et al. 1981) and the colonization of New Zealand by the American D. pseudoobscura (Lambert & McLea 1983).

Habitat selection and segregation play a significant role in species coexistence. Most Drosophila species are very reluctant to enter human constructions while others, which are really domestic, will concentrate in houses and other buildings, provided some resources are available there. It therefore seems possible to speak of a guild of domestic species (David et al. 1983), which, in the tropics, comprises mainly three cosmopolitan species, i.e., D. melanogaster, D. ananassae and D. repleta. During a survey of the domestic Drosophila community in Brazzaville (Congo), two more species have been found to make permanent populations in houses and their discovery is reported here. One of these is D. virilis, which had already been defined as cosmopolitan but had been known in Africa only as a single locality: one female collected in Johannesburg, South Africa, by Agnew (March 1973). There had been some doubt that a natural population of this species could still occur on the African continent, and the present observation confirms its establishment in a tropical country.

The second observation is more interesting, since it concerns a widespread American species, D. polychaeta. The discovery of a permanent population in Brazzaville extends its distribution and allows it to be classified as cosmopolitan. In fact, D. polychaeta, which seems to have a neotropical origin, was already known to have permanent populations in Hawaii and Micronesia and was also occasionally found in North America and Europe (Wheeler 1981). We do not know when D. polychaeta was successfully introduced to Africa. The lack of any previous report could suggest recent introduction. However, as pointed out by Tsacas et al. (1981), the Afrotropical fauna is far from being well known, and many new species from the Ivory Coast have been described by Burla (1954). We have examined these "African endemics" and found that D. baole, collected by Burla in 1951 but described in 1954, was in fact D. polychaeta, described by Patterson & Wheeler in 1942. The Drosophila strain from Brazzaville was crossed with a D. polychaeta strain from Guadeloupe and proved to be fully fertile. Morphologically, D. baole cannot be distinguished from D. polychaeta and must be considered identical. Thus the synonymy is established as follows: Drosophila baole, Burla (1954) = Drosophila polychaeta Patterson & Wheeler (1942). D. polychaeta is probably widespread in tropical Africa although it may be restricted to urban areas. We now know that at least 22 drosophilid species are cosmopolitan, 6 of which have an American origin.