1982). This produces litter, or detritus, which is scattered and progressively fragmented by wind action. An unknown but possibly large fraction of the litter may also be degraded by ultraviolet radiation (Moorhead & Reynolds 1989, MacKay in press). What is not lost to physical forces becomes available to omnivorous animals called "detritivores" that typically dominate the animal biomass of deserts (Crawford 1991).

We use available literature as well as our own experience to compare the detritivores of the CAZ and Namib ecosystems. Such scavengers of particulate dead organic material (mostly plant litter) in terrestrial ecosystems are mainly arthropods. Gastropod molluscs and oligochaete annelids are also important detritus consumers in many land-based decomposer food webs. A wide range of detritivores other than oligochaetes typically inhabits deserts (Crawford 1981). Among vertebrates, the term "detritivore" has been applied to several species of desert lizards (Pietruszka *et al.* 1986) and may be appropriate for certain avian and mammalian scavengers as well.

In order to appreciate the distributions and roles of detritivores in the CAZ and the Namib, it is useful first to summarize the evolution and physical/biological attributes of these arid regions. Hence the following brief comparison is made of the two deserts.

THE DESERTS COMPARED

The CAZ is part the southern arid region of coastal South America that includes the Atacama and Peruvian Deserts to the north. The aridity that now characterizes this region may have begun in Holocene times (Ochsenius 1982, Arroyo *et al.* 1988), although some authors (cited by Rundel *et al.* 1991) feel that hyperadity has prevailed in northern Chile and southern Peru since the Middle to Late Miocene. The Namib, in contrast, appears to be much older and has probably been at least semi-arid for 80 million years (Ward *et al.* 1983). Both deserts now contain extensive regions of hyper-aridity and are generally considered among the driest places on earth.

Aridity in the CAZ and the Namib is maintained in part by the subsidence of dry tropical air (Lyndolph 1957, cited in Louw & Seely 1982; Trewartha 1961, cited in Rundel *et al.* 1991). Aridity is also promoted by the cold Humboldt and the cold Benguela upwelling Systems, which occur along the southwestern coasts a South America and Africa, respectively (Ward *et al.* 1983, Rauh 1985). Low temperatures generated by the currents condense moisture in landward-moving air, producing fogs that blanket coastal landscapes and dry air masses that pass to the interior. The fogs periodically extend inland due to offshore winds and coastal topography. Coastal fogs tend to be more seasonal (winter months) and subject to greater topographic relief in the CAZ than in the Namib (Louw & Seely 1982). Although other forms of precipitation are relatively unimportant along the coasts of both deserts, rainfall becomes increasingly significant, relative to fog, as one moves inland and/or gains elevation.

In a physiographic sense, the CAZ and the Namib are very different. An irregular range of low mountains (Cordillera de la Costa) rises abruptly along the coast of the former. Inversions of stratus clouds form thick, persistent fog banks that regularly cover the coastal scrub and lomas formations, as well as relict forests at higher elevations (Rauh 1985, Rundel *et al.* 1991). By comparison, most of the coastal Namib consists of extensive dunefields. These, like the coastal cordillera in Chile and Peru, are periodically shrouded in fog arriving from offshore. Although most Namib dunes are relatively free of vegetation, grasses and shrubs occur on their lower slopes and in interdunes (Seely 1978, Seely & Louw 1980).

The interiors of these two deserts also differ physiographically. The interior of the CAZ is characterized by an assortment of broad valleys and mixed landscapes. Human impacts in recent centuries have greatly altered the original vegetation. At present, the plant cover ranges from being virtually nonexistent to consisting of diverse communities that include many introduced species. Rain shadow effects created by the Andes greatly affect the climate and vegetation of the interior. To the east the valleys give way to a rocky, cactus-dominated desert, which merges with areas supporting thorn-shrubs and cushion plants as elevation increases. Eventually, one reaches the high altitude Puna Desert that extends to the upper limit of vegetation (Rauh 1985).