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NATURAL HISTORY NOTES OF NAMIB DUNE SPIDER FAUNA
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I have seen at least 27 species of spiders from 12 families in the dunes of the central Namib (north of 24°) within 20 km of Gobabeb. All of the spiders associated with sandy substrata, dig to some depth into it; most use silk-lined burrows, that can usually be closed with a collar-door, trap-door, or silken mat. I have either seen them active on the surface, excavated them from their retreats, caught them in pit traps, or in specially designed spider traps (Henschel, in press).

The small (<30 mg) cryptic gnaphosids, Asemesthes spp., may be the most abundant dune spiders. The maximum number seen active on ±100 m² of interdune sand on one occasion in April 1987 exceeded 100 Asemesthes lineatus, mostly adult females. This diurnal active hunter catches prey larger than itself by quickly encircling the prey's legs with sticky silk to immobilize it before striking.

I estimated that in terms of biomass the relatively large (1-5 g) Heteropodidae are probably the most important family in the dunes. All are nocturnal and live in shallow burrows covered with trap-doors. They capture any animal of their size or smaller, especially beetles. These spiders are territorial and cannibalistic and live for two to four years. The dancing white lady, Leucorchestris arenicola (= L. kochi), is common and appears to be the dominant wandering spider on interdune sand, the dune base and lower plinth (Henschel, 1991). The golden wheel spider, Carparachne aureoflava, is the most numerous spider that burrows in unconsolidated sand, especially slipfaces. This choice of habitat, as well as its ability to wheel appear to be two efficient means of avoiding being captured and parasitised by pompilid wasps, Schistonyx aterrimus (Henschel, 1990). On interdune gravel, heteropodids are represented by Orchestrella browni (= O. longipes). A different species of pompilid wasp, Paxacyphononyx trichriocephalus, is associated with Orchestrella (M.Day, pers.comm.).

The eresid spider, Seothyra henscheli, can locally be very abundant, with densities ranging up to 50/m². As the only common web-building spider occurring on open dune sand, it builds a silken mat flat on the sand surface and captures mainly ants snared on the sticky edges of the mat. It puts its vertical burrow to good use to thermoregulate while capturing prey in the heat (Lubin & Henschel, 1990). It is notable that the spider is capable of maintaining a functional sticky trap despite moving sand (Henschel & Lubin, in press). Seothyra's web can be compared with the sheet-and-retreat web of an arboreal eresid, Gandanomena echinatus, that lives against the stem of !Nara or camelthorn trees.

The Zodariidae is another diverse spider family occurring in the dunes. One common species, the sand-swimming spider, Psammoduon deserticola constructs no silk-lined burrow, like other species do. I have seen P. deserticola catch fishmoths, but know little else of their habits. On a dune base, many Capheris crassimana once suddenly erupted from their cryptic burrows after a rain-storm (±10 mm), revealing that they may be more common than previously expected.

At least one species of Cyrtaucheniidae is quite common in the

dunes, but is seldom seen. Its burrow is 1-1.5 m deep and its main period of activity appears to be associated with the principal East Wind season. The burrow entrance often bears a heap of coiled sand sausages that have been bound with silk. A segestriid also deposits silk-bound sand in little heaps around its open burrow entrance. It inhabits a door-less burrow with loose silken collars along its length that can be closed for protection.

The Salticidae are common in the dunes. Cosmophasis sp. is an ant mimic and an ant predator (Curtis, 1989). The taxonomy of other salticids is in an uncertain state and little else of their habits is known, except that one has the ability to wheel in wind.

Palpimanidae have rarely been seen except in association with nests of other spiders, particularly in the burrows of Carparachne aureoflava and Seothyra henscheli. Palpimanids have been observed using their elongate front legs to lure and capture both of the other species. They consume the other spiders and may lay eggs in the captured burrows.

Little is known about the habits of philodromids, clubionids, thomisids and caponiids. The Caponiidae have only been found in artificial pit traps and amongst prey remains of Seothyra. The absence of the wolf spiders, Lycosidae, in the known fauna of the Namib dunes is notable, although members of this family are common in open sand of the adjacent Kuiseb River.

(These initial notes will be supplemented with more concrete data at a later stage. Identifications are tentative and need to be confirmed. My collection of spiders from the dunes of the central Namib may contain more species than indicated in Table 1.)

References

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Table 1: Spider fauna seen by J.R.Henschel in the sand dunes of the central Namib near Gobabeb. Normal substratum, typical dune level, as well as the range of occurrence are indicated. Brackets indicate certain or possible synonyms that have not been formally documented in taxonomic literature. Codes for dune level are: 1-interdune gravel; 2-interdune sand; 3-dune base; 4-lower plinth; 5-upper plinth; 6-slipface; 7-dune crest.

Family	Abundance	#spp	Species	Normal Substr.	Typical Habitat
Gnaphosidae	Abundant	2	Asemesthes lineatus	Sand	2 (1-7)
			Asemesthes sp. II	Gravel	1
Heteropodidae	Numerous	5-8	Leucorchestris arenicola	Sand	2 (2-5)
			L.kochi		
			L.sabulosa		
			Carparachne aureoflava	"	6 (2-7)
			C.alba	"	6 (4-7)
			Orchestrella browni	Gravel	1
			O.caroli		
			O.longipes		
			Microrchestris sp.	Sand	6 (3-7)
Eresidae	Numerous	2	Seothyra henscheli	"	2 (1-4)
			Gandanomena echinatus	Plant	2
Zodariidae	Numerous	4	Psammoduon deserticola	Sand	2 (2-7)
			Capheris crassimana	"	3
			Cydrela approximata	"	3
			Diorea sp.	"	2
			sp?	"	3 (2-4)
Segestriidae	Common	1	sp?	"	3 (2-4)
Salticidae	Common	4	Cosmophasis sp.	Plant	2 (2-4)
			sp? (striped wind wheel)	Sand	2 (2-4)
			sp? sp?	"	2 (2-7)
Cyrtacheniidae	Common	1	sp?	"	1 (1-4)
Palpimanidae	Occasional	2	Palpimanus stridulator	"	5 (4-5)
			sp?	"	3 (2-4)
Philodromidae	Occasional	2	Hirriusa bidentatus	"	4 (4-7)
			Thanatus sp.	"	2
Clubionidae	Rare	1	Clubiona sp.	Plant	4
Thomisidae	Rare	1	Thomisus sp.	"	3
Caponiidae	Rare	1	sp?	Sand	2
Araneidae	Rare	1	Argiope nigrovittata	Plant	2
TOTAL	13	27-30			