

Table 4: Pollen-types in Amaranthaceae by Mitre (1963).

	<i>Amaranthus</i> -type		
	<i>Amaranthus</i> - type <i>sensu stricto</i>	<i>Cyathula</i> -type	<i>Celosia</i> -type
Pollen morphological characters: Sexine pattern	Faintly to moderately granulate	Prominently granulate	Baculariate
Total number of genera studied	5	2	2
Genera	<i>Amaranthus spinosus</i> L., <i>A. viridis</i> L., <i>A. tricolor</i> L., <i>A. hybridus</i> L., <i>A. polygamus</i> L., <i>A. tenuifolius</i> Willd., <i>A. spinosus</i> L., <i>Achyranthes aspera</i> L., <i>A. bidentata</i> Blume, <i>Aerva lanata</i> (L.) Juss., <i>A. sanguinolenta</i> (L.) Blume, <i>A. tomentosa</i> Forssk., <i>A. javanica</i> (Burm.f.) Juss. ex Schult., <i>A. monsoniae</i> (L. f.) Mart., <i>Digera arvensis</i> Forssk., <i>Pupalia lappacea</i> (L.) Juss., <i>P. atropurpurea</i> (Lam.) Moq.	<i>Cyathula prostrate</i> (L.) Blume, <i>C. capitata</i> Moq., <i>Deeringia celosioides</i> R.Br.	<i>Celosia argentea</i> L., <i>C. cristata</i> L., <i>Allmania albida</i> (Willd.) R.Br. ex Hook.f., <i>A. nodiflora</i> (L.) R.Br. ex Wight.

Table 4: Continued.

<i>Gomphrena</i> -type			
	<i>Gomphrena</i> -type <i>sensu stricto</i>	<i>Alternanthera</i> -type	Not included in any group
Pollen morphological characters: Sexine pattern	reticulate several meshes, without spinules	reticulate with few meshes, without spinules	reticulate with several meshes and spinulate
Total number of genera studied	1	1	1
Genera	<i>Gomphrena globosa</i> L., <i>G. celosioides</i> Mart.	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC., <i>A. repens</i> J.F.Gmel.	<i>Psilotrichum ferrugineum</i> (Roxb.) Moq.

Table 5: Pollen-types in Centrospermae by Nowicke (1975).

	Type I	Type II	Type III
Pollen morphological characters: apertures	3- Colpate	Pantoporate	Pantocolpate
Family studied	Aizoaceae, Cactaceae, Caryophyllaceae, Molluginaceae, Nyctaginaceae, Phytolaccaceae, Portulacaceae	Amaranthaceae, Cactaceae, Caryophyllaceae, Chenopodiaceae, Dysphaniaceae, Nyctaginaceae, Phytolaccaceae, Portulacaceae	Basellaceae, Cactaceae, Molluginaceae, Nyctaginaceae, Phytolaccaceae, Portulacaceae
Genera studied in Amaranthaceae		11	
Species studied in Amaranthaceae		<i>Amaranthus spinosus</i> L., <i>Aerva leucura</i> Moq., <i>Allmania nodiflora</i> (L.) R.Br. ex Wight , <i>Celosia argentea</i> L., <i>Cyathula achyranthoides</i> (Kunth) Moq., <i>Deeringia amaranthoides</i> (Lam.) Merr., <i>Hermbstaedia odorata</i> C.B.Clarke, <i>Marcelliaopsis denudate</i> (Hook.f.) Schinz, <i>Psilotrichum africanum</i> Oliv., <i>P. ferrugineum</i> (Roxb.) Moq., <i>P. trichotomum</i> Blume, <i>Ptilotus exaltatus</i> Nees, <i>Pupalia lappacea</i> (L.) Juss.	

Table 5: Continued.

	Type IV	Type V	Specialized
Pollen morphological characters: apertures	3- colpate	pantoporate	Any pollen morphology not classifiable as Type I, II, III, IV and V
Family studied	Nyctaginaceae	Caryophyllaceae	Amaranthaceae, Achatocarpaceae, Cactaceae, Basellaceae, Bataceae, Caryophyllaceae, Didiereaceae, Gyrostemonaceae, Portulacaceae, Theligonaceae
Genera studied in Amaranthaceae			6
Species studied in Amaranthaceae			<i>Brayulinea densa</i> (Willd. ex Schult.) Small, <i>Froelichia interrupta</i> (L.) Moq., <i>Gomphrena celosioides</i> Mart., <i>G. elegans</i> Mart., <i>Iresine angustifolia</i> Euphrasén, <i>Pfaffia grandiflora</i> (Hook.) R.E.Fr., <i>Tidestromia lanuginosa</i> (Nutt.) Standl.

Table 6: Pollen-type of Amaranthaceae by Borsch (1998).

<i>Amaranthus</i> -type						
Number	Pollen types	Subfamily	Tribe	Subtribe	Number of genus	Genus/ Species
1	Amaranthus	Amaranthoideae	Amarantheae	Amaranthinae	2	<i>Herbstia, Amaranthus</i>
2	Arthraerua		Amarantheae	Aervinae	16	<i>Saltia, Sericostachys, Sericocomopsis, Nelsia, Leucosphaerea, Cyathula, Arthraerua, Aerva, Trichuriella, Nothosaerva, Omegandra, Psilotrichum, Achyranthes, Centrostachys, Achyropsis, Pandiaka</i>
3	Centemopsis		Amarantheae	Aervinae	3	<i>Centemopsis, Eriostylos, Daysphaera</i>
4	Chionothrix		Amarantheae	Aervinae	1	<i>Chionothrix</i>
5	Deeringia		Celosieae		4	<i>Deeringia, Henonia, Celosia, Hermbstaedia</i>
			Amarantheae	Amaranthinae	8	<i>Bosea, Chamissoa, Siamosia, Allmania, Indobanalia, Lagrezia, Digera, Pleuropterantha</i>
				Aervinae	4	<i>Volkensinia, Nototrichium, Calicorema, Nyssanthes</i>

Table 6: Continued.

<i>Amaranthus</i> -type						
Number	Pollen types	Subfamily	Tribe	Subtribe	Number of genus	Genus/ Species
6	Iresine	Amaranthoideae	Celosieae		1	<i>Pleuropetalum</i>
			Amarantheae	Amaranthinae	1	<i>Charpentiera</i>
				Aervinae	1	<i>Allmaniopsis</i>
		Gomphrenoideae	Gomphreneae	Gomphreniaea	3	<i>Woehleria, Iresine, Irenella</i>
7	Kyphocarpa	Amaranthoideae	Amarantheae	Aervinae	1	<i>Kyphocarpa</i>
8	Marcelliopsis		Amarantheae	Aervinae	2	<i>Centema, Marcelliopsis</i>
9	Mechowia		Amarantheae	Aervinae	1	<i>Mechowia</i>
10	Psilotrichum		Amarantheae	Aervinae	5	<i>Sericocoma, Pupalia, Calicorema, Stilbanthus, Psilotrichum</i>
11	Psilotrichopsis		Amarantheae	Aervinae	1	<i>Psilotrichopsis</i>
12	Ptilotus		Amarantheae	Aervinae	1	<i>Ptilotus</i>
13	Sericorema		Amarantheae	Aervinae	1	<i>Sericorema</i>

Table 6: Continued.

<i>Gomphrena</i> -type						
Number	Pollen types	Subfamily	Tribe	Subtribe	Number of genus	Genus/ Species
14	Gomphrena	Gomphrenoideae	Gomphreneae	Froelichiinae	6	<i>Gomphrena, Guilleminea, Froelichia, Froelichiella, Blutaparon, Lithophila</i>
15	Pseudopiantago		Pseudopiantago		1	<i>Pseudopiantago</i>
16	Pfaffia		Gomphreneae	Froelichiinae	3	<i>Pfaffia, Quaternella, Alternanthera, Pseudogomphrena</i>
17	Tidestromia		Gomphreneae	Froelichiinae	1	<i>Tidestromia</i>
18	Transitional between Gomphrena-type and Pfaffia-type		Gomphreneae	Froelichiinae	1	<i>Hebanthe</i>