

The taxonomy of complicated native African taxa, *Biscutella maritima* (Brassicaceae) and annual species of *Sesuvium* (Aizoaceae) is discussed. The distribution of *B. maritima* is widened to the most of the coastal areas of NE Algeria and N Tunisia. Morphological differences with regard to other North African members of *Biscutella* ser. *Biscutella* are reported to facilitate the identification of *B. maritima*. We propose to accept four annual *Sesuvium* species (instead of the one previously accepted species, *S. sesuvioides* sensu amplissimo) with different distributions in Africa: *S. digynum*, *S. hydaspicum*, *S. sesuvioides* s.str. and *S. nyasicum*. A delimitation key based on morphological and carpological characters is provided. Lectotypes of *S. digynum*, *S. digynum* var. *angustifolium*, *S. hydaspicum*, *S. nyasicum*, *Diplochonium sesuvioides* (*Sesuvium sesuvioides*) and *Trianthema polysperma* (synonym of *Sesuvium hydaspicum*) are selected. Other discussed taxa belong to the alien elements of the flora. *Atriplex semibaccata* (Amaranthaceae-Chenopodiaceae) is reported as a new species for Cape Verde. *Gaillardia × grandiflora* (Asteraceae) is discovered as a new species for Africa found in Morocco. *Prosopis velutina* (Fabaceae) is collected for the first time in Northern Africa (Morocco). *Mollugo verticillata* (Molluginaceae) is recorded as a new species for DR Congo. Its morphology, including seed ornamentation, is discussed in reference to other similar-looking Molluginaceae. Incidence of American species *Heterotheca subaxillaris* (Asteraceae) in North Africa is discussed. *Vernonanthura polyanthes* (Asteraceae) is recorded as a naturalized invasive species in eastern Zimbabwe. It seems to be the first documented discovery of this ergasiophyte in Africa.