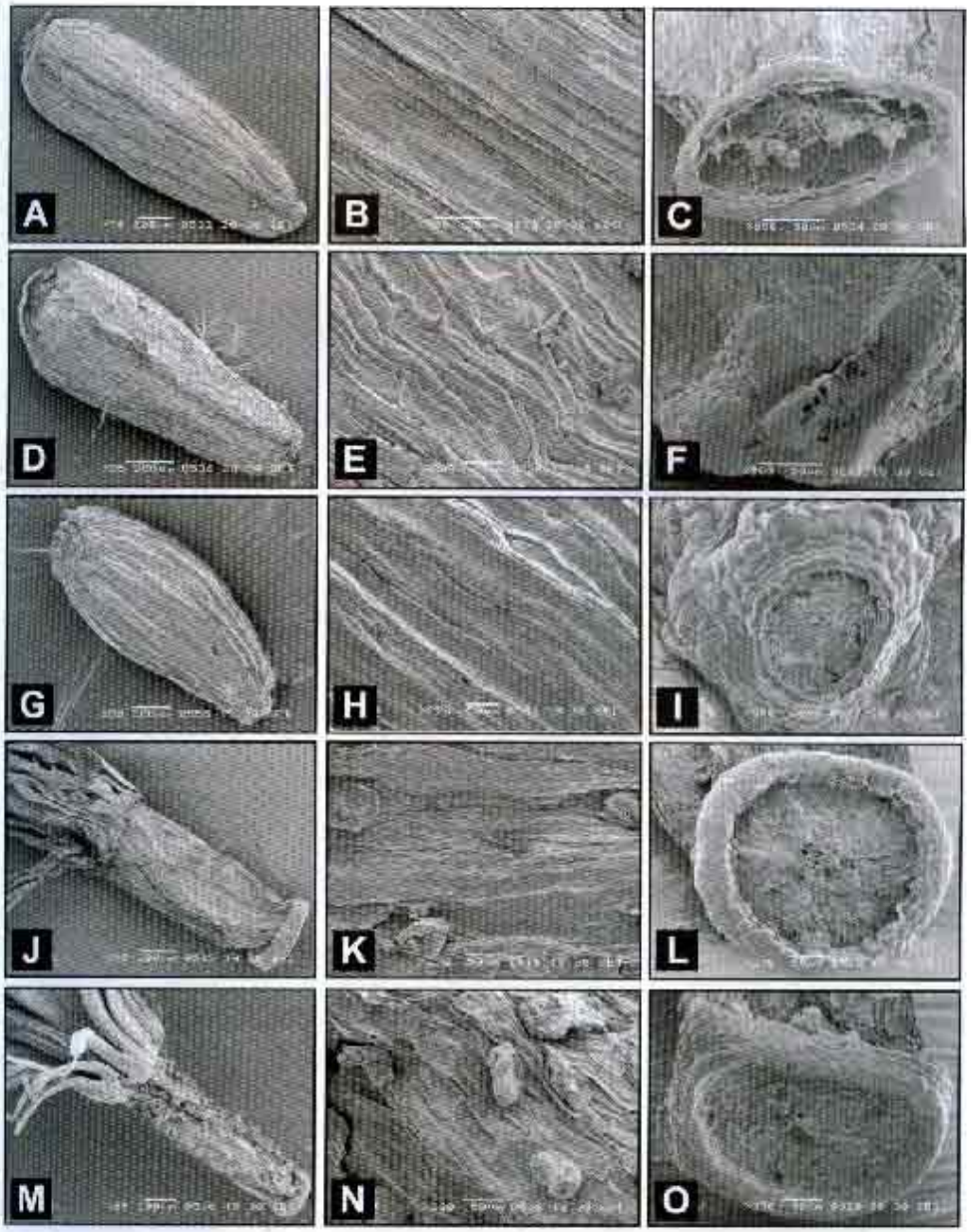

Fig. 1. Scanning Electron Micrographs. *Achillea millifolium*: A, cypsela; B, surface; C, carpopodium. *A. wilhelmsii*: D, cypsela; E, surface; F, carpopodium. *Ajania fruticulosa*: G, cypsela;. H, surface; I, carpopodium. *Allardia glabra*: J, cypsela; K, surface; L, carpopodium. *A. nivea*: M, cypsela; N, surface ; O, carpopodium (undeveloped) (scale bar: A,D,G,J,M=200μm; B,C,E,F,H,I,K,L,N,O=50μm).

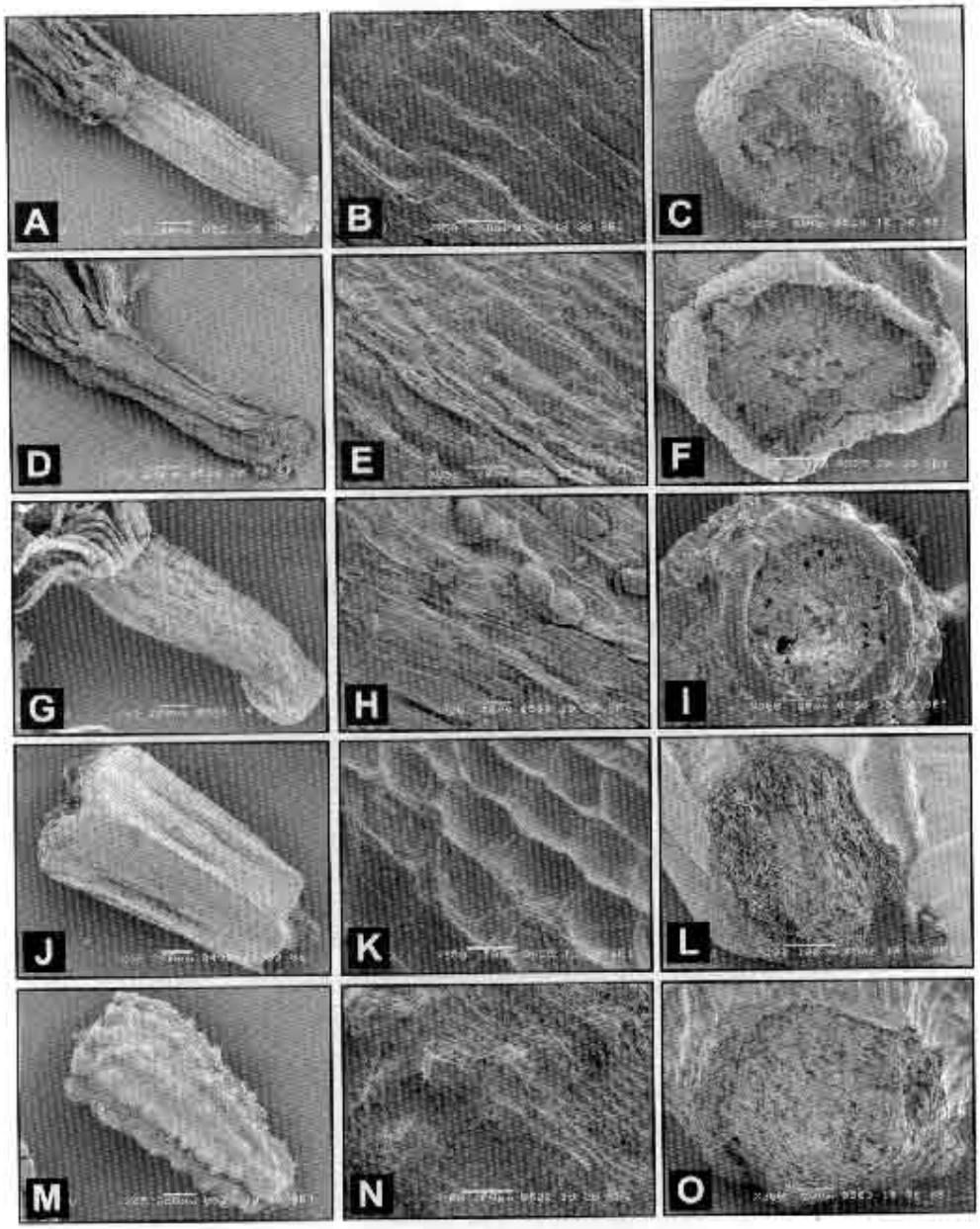

Fig. 2. Scanning Electron Micrographs. *Allardia stolickzkae*: A, cypsela; B, surface; C, carpopodium. *A. tomentosa*: D, cypsela; E, surface; F, carpopodium. *A. tridactylites*: G, cypsela;. H, surface; I, carpopodium. *Anthemis arvensis*: J, cypsela; K, surface; L, carpopodium (undeveloped). *A. cotula*: M, cypsela; N, surface ; O, carpopodium (undeveloped) (scale bar: A,D,G,J,M=200µm;B,E,K=20µm;C,H,I,O=50 µm ; F,N,L=100µm)

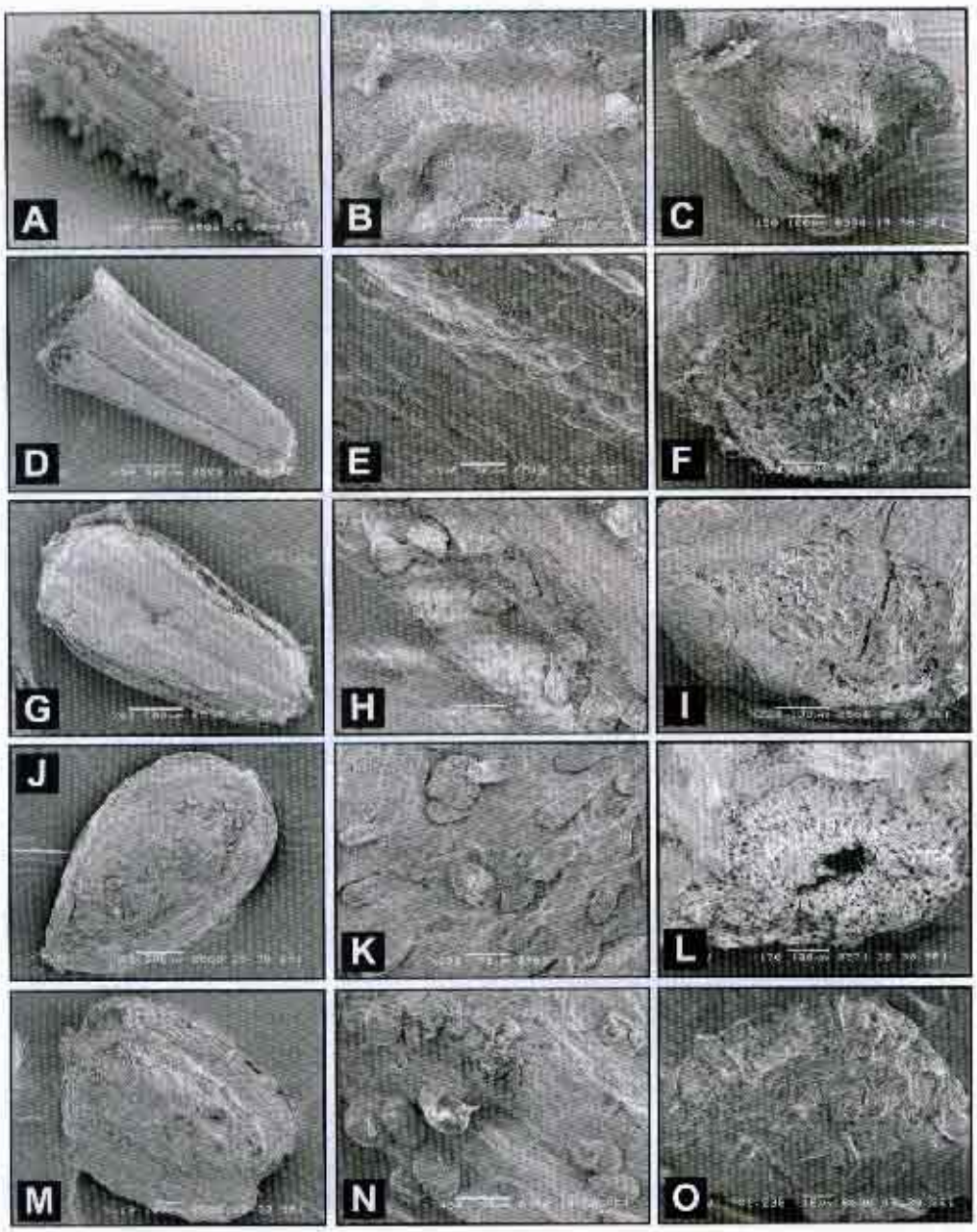

Fig. 3. Scanning Electron Micrographs. *Anthemis odontostephana*: A, cypsela; B, surface; C, carpopodium (undeveloped). *A. rhodocentra*: D, cypsela; E, surface; F, carpopodium (undeveloped). *Chrysanthemum coronarium* (Disc floret): G, cypsela; H, surface; I, carpopodium (undeveloped). *Cotula anthemoides*: J, cypsela; K, surface; L, carpopodium (undeveloped). *A. hemisphaerica*: M, cypsela; N, surface; O, carpopodium (undeveloped) (scale bar: A,J =200μm; B,C,F,H,I,L,M=100μm; D,G=500μm; E,K,N =50μm; O=10μm).

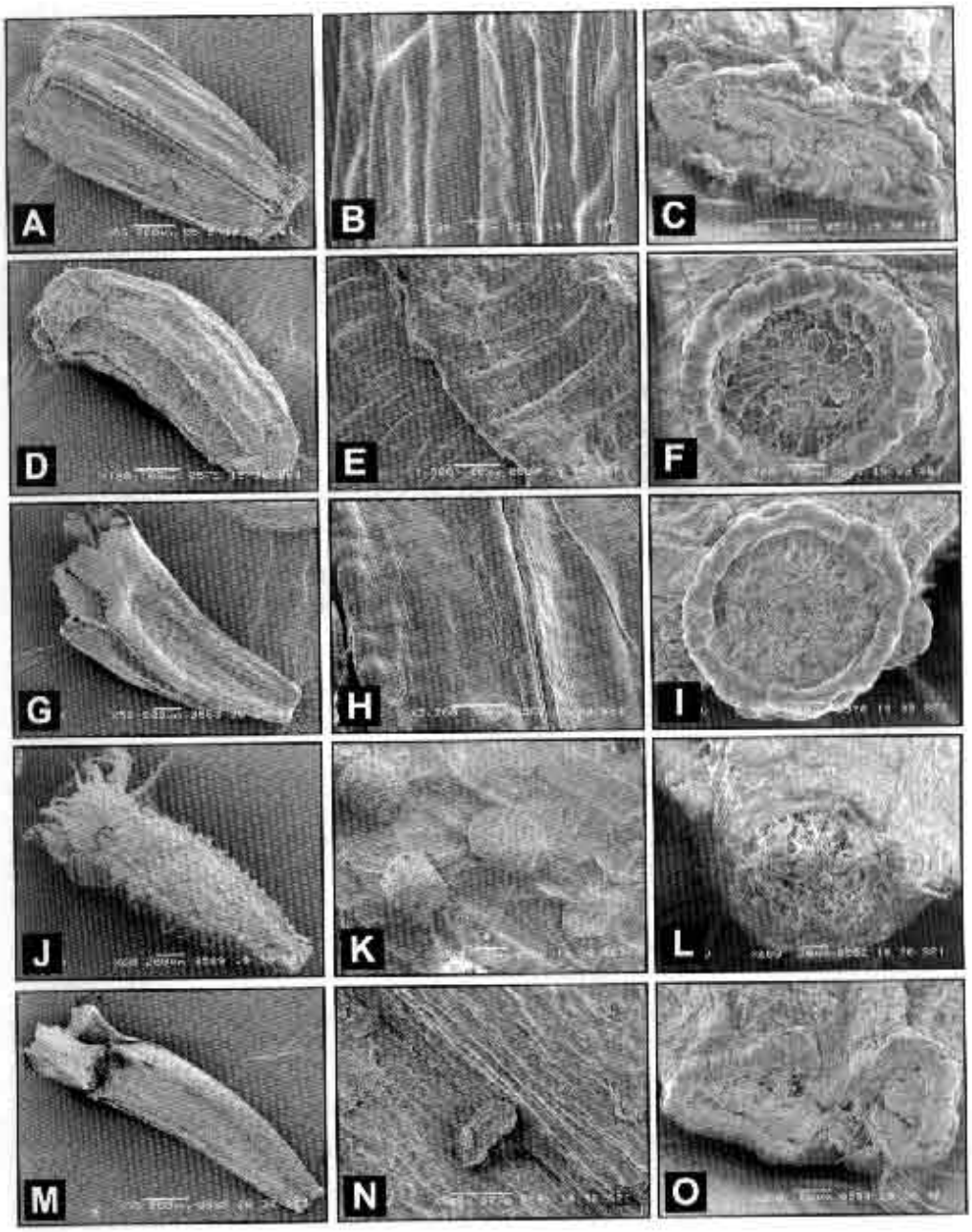

Fig. 4. Scanning Electron Micrographs. *Leucanthemum vulgare* (Disc floret): A, cypsela; B, surface ; C, carpopodium. *Matricaria aurea*: D, cypsela; E, surface; F, carpopodium. *M. recutita* (Ray floret): G, cypsela;. H, surface; I, carpopodium. *Microcephala lamellata*: J, cypsela; K, surface; L, carpopodium. *Richteria pyrethroides*: M, cypsela; N, surface; O, carpopodium (undeveloped) (scale bar: A,G,J=200μm; B=5μm; C,N,O=50μm; D=100μm; E,H=10μm; F,I,K,L= 20μm; M=500 μm).

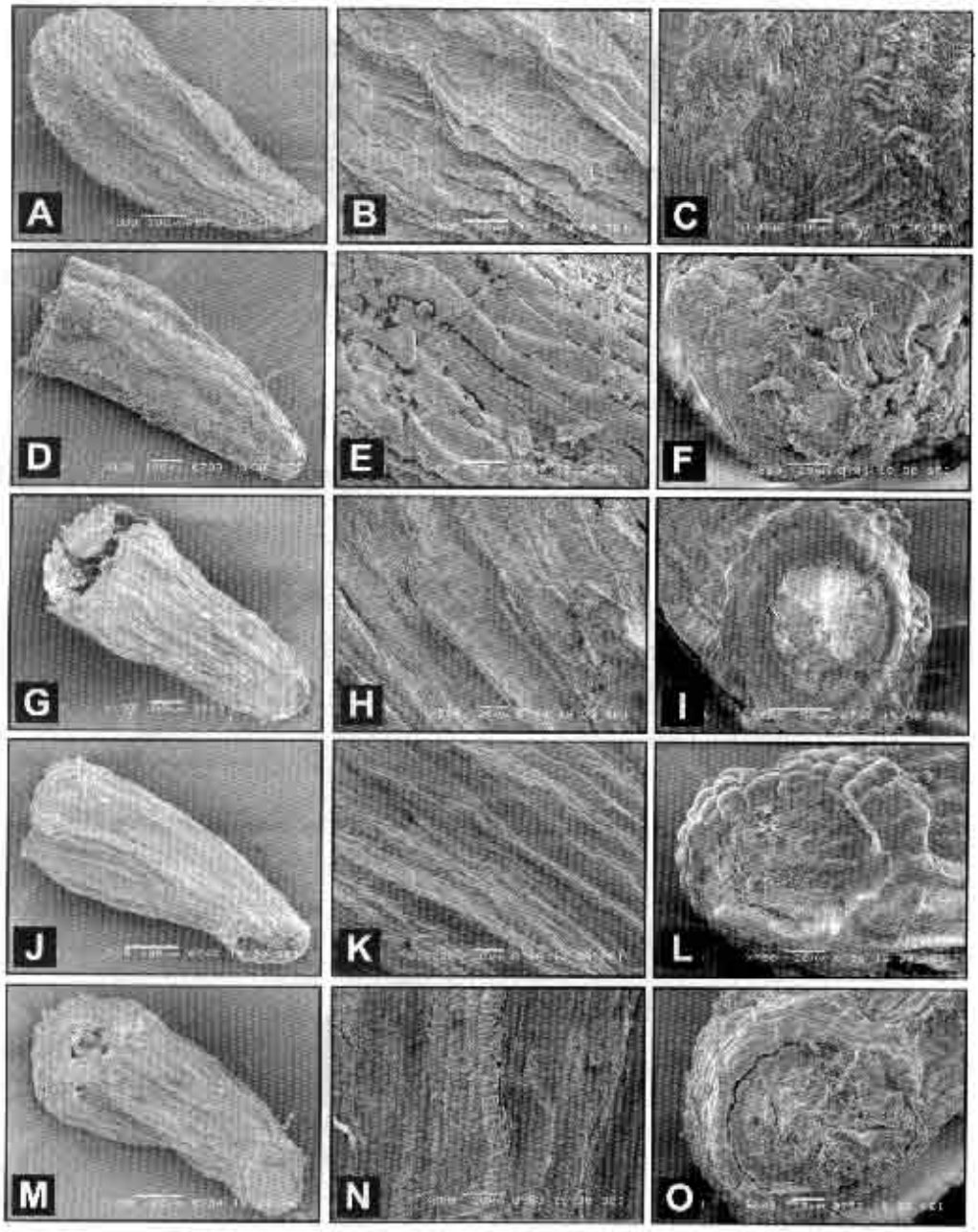

Fig. 5. Scanning Electron Micrographs. *Seriphidium kurramense*: A, cypsela; B, surface; C, carpopodium (Undeveloped). *S. leucotrichum*: D, cypsela; E, surface; F, carpopodium (Undeveloped). *S. oliverianum*: G, cypsela; H, surface; I, carpopodium. *S. quettense*: J, cypsela; K, surface; L, carpopodium. *S. sieberi*: M, cypsela; N, surface; O, carpopodium (scale bar: A,D,G,J,M=100μm B,E,F,H,I,L,N,O=20μm; C,K=10μm; J=50μm).

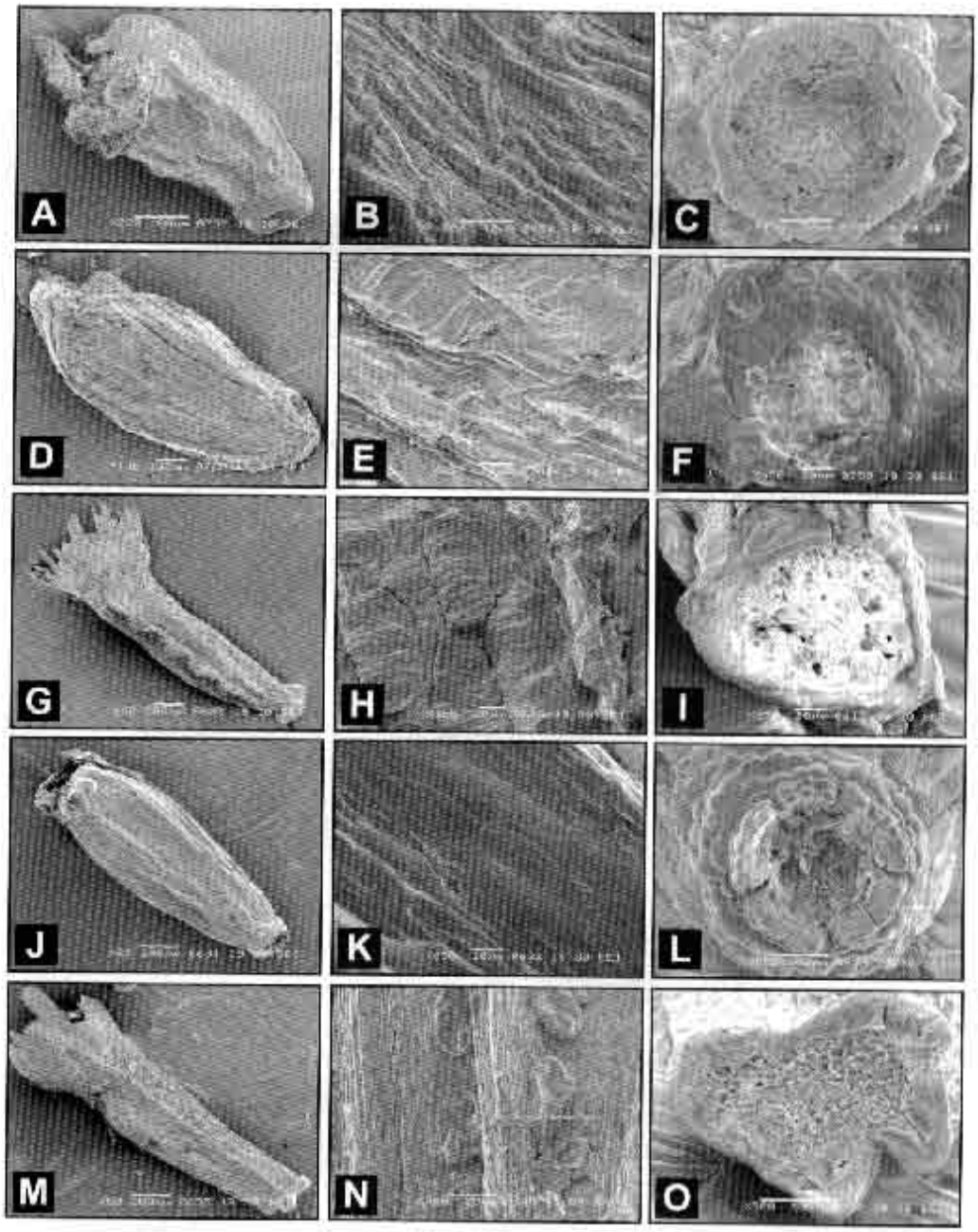

Fig. 6. Scanning Electron Micrographs. *S. stenocephalum*: A, cypsela; B, surface; C, carpopodium . *S. turanicum*: D, cypsela; E, surface; F, carpopodium. *Tanacetopsis afghanica*: G, cypsela; H, surface; I, carpopodium. *Tanacetum artemisioides*: J, cypsela; K, surface; L, carpopodium. *T. chitralense* : M, cypsela; N, surface ; O, carpopodium (scale bar: A,D=100μm G,J,M= 200μm ; E,F,H,I,K=20μm ; C,L,N,O= 50μm).

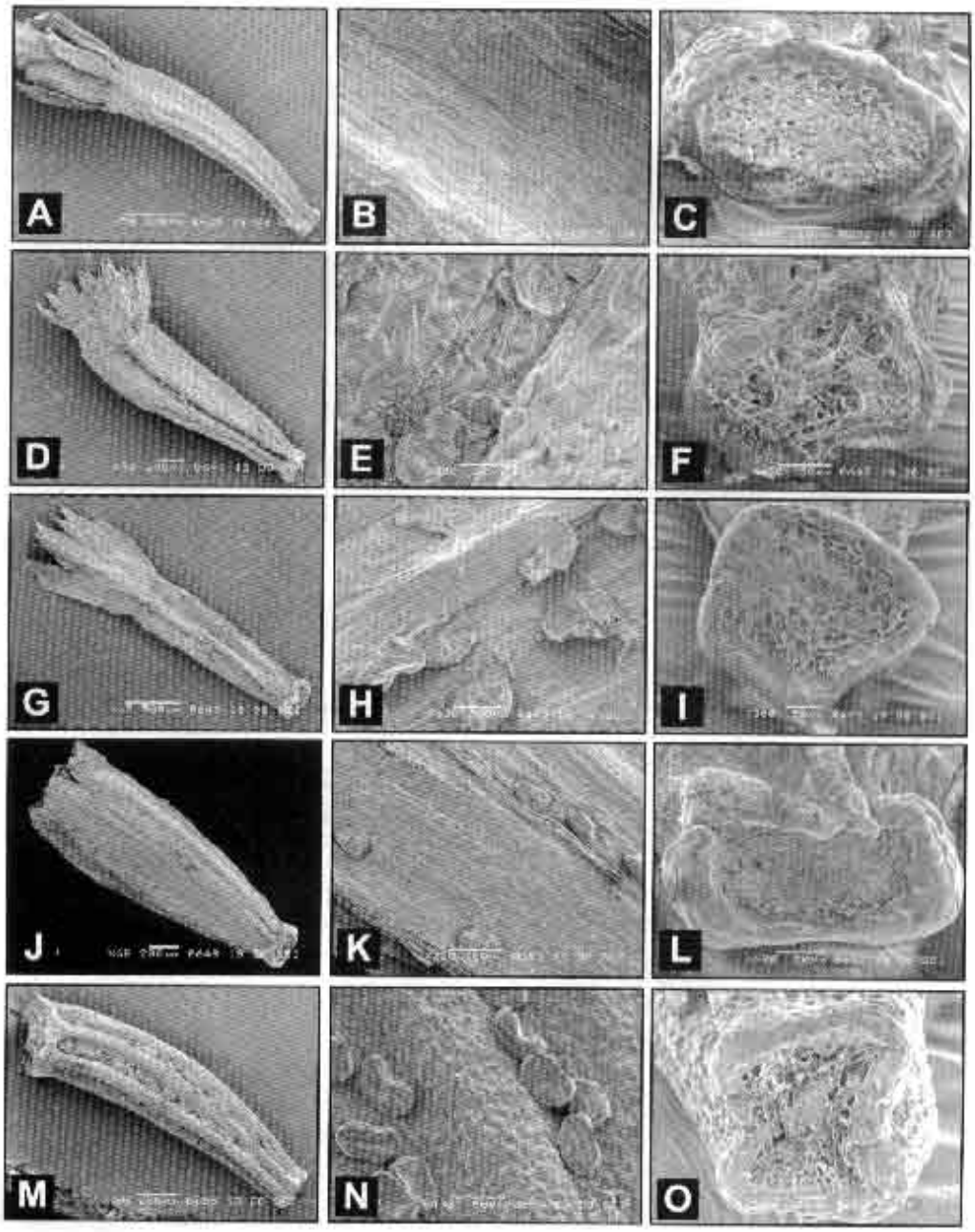

Fig. 7. Scanning Electron Micrographs. *Tanacetum cinerariifolium*: A, cypsela; B, surface; C, carpopodium. *T. falconeri*: D, cypsela; E, surface; F, carpopodium. *T. griffithii*: G, cypsela; H, surface; I, carpopodium. *T. pakistanicum*: J, cypsela; K, surface; L, carpopodium. *T. parthenium*: M, cypsela; N, surface, O, carpopodium (scale bar: A,G=500 μm; D,J,M=200μm; B,E,O= 20μm; K=100μm; C,F,H,I,L,N=50μm).

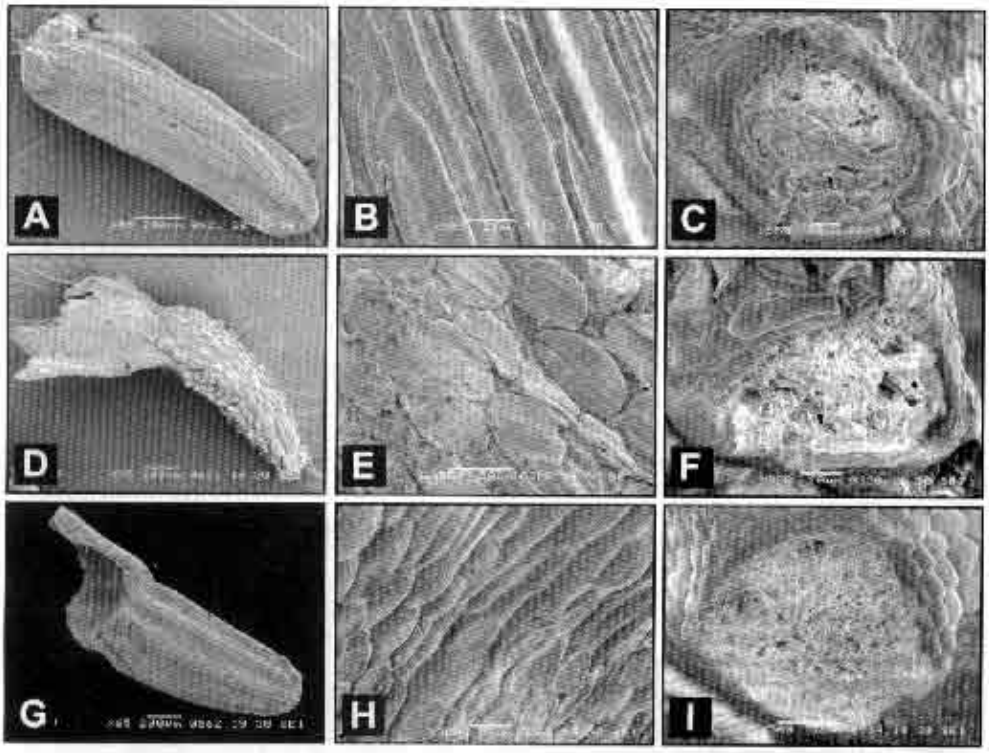

Fig. 8. Scanning Electron Micrographs. *Tripleurospermum disciforme*: A, cypsela; B, surface; C, carpopodium. *T. parviflorum*: D, cypsela; E, surface; F, carpopodium. *Xylanthemum macropodum*: G, cypsela; H, surface; I, carpopodium. (scale bar: A,D,G=200μm ; B,C,F,H= 20μm; E,I=50μm).

Cypselas elliptic-oblong, 1.5-2.5x0.75-1mm, yellow, 5-6-ribbed, glabrous. Pappus forming one sided entire auricle, off white, 1mm long. Carpopopdium broad circular disc like without any interruption, 380μm in diameter. Foramen of capopodium 290μm in diameter (Table 1; Fig. 8G-I).

Results and Discussion

The tribes Inuleae, Heliantheae and Eupatoreae of the family Asteraceae are characterized due to their cypsela features (Bremer, 1994; Qaiser & Abid, 2003). However, similar to those of tribes Plucheeae and Gnaphalieae (Abid & Qaiser, 2007b, 2008b) Anthemideae does not have characteristic cypsela. Although on the basis of cypsela morphology 44 species distributed in 15 genera of the tribe Anthemideae could be recognized from Pakistan (Table 1; Figs. 1-8).

All the genera of the Anthemideae can be divided into two main groups on the basis of pappose or epappose cypsela except that of the three genera *viz*., *Anthemis*, *Matricaria* and *Tripleurospermum* where both the pappose and epappose cypselas are found so these genera are discussed in both the groups. Besides this, *Tripleurospermum* is the only genus which has two abaxial resinous glands towards the cypsela apices (Ghafoor, 2002).