ABSTRACT

1. a) Chemical examination of *Tithonia diversifolia* (Hemsl.) A. Gray has yielded four known sesquiterpene lactones. The absolute stereochemistry of one of them namely *tagitinin A* (1) has been established by chemical correlation with *tirotundin* (tagitinin D) (4) - a compound of authenticated stereochemistry.

b) Chemical correlation of *tagitinin A* (1) with tetrahydro-zebrevin (18) and hexahydrozebrevin (19) has led to a revised stereochemistry of the ester side chain at C-8 in zebrevin (15).

2. Chemical examination of *Inula capra* DC. has yielded four new flavonoids (2R, 3R)-5'-methoxy-3,5,7,2'-tetrahydroxy flavanone (31), 7,5'-dimethoxy-3,5,2'-trihydroxy flavone (39), (2S)-5,7,2',5'-tetrahydroxy flavanone (47) and 7,5'-dimethoxy-3,5,2'-trihydroxy flavanone (33) with an unusual ring-B substitution pattern. Their structures have been established by extensive use of $^1$H n.m.r., chemical correlation and degradation.

3. Chemical examination of *Artemisia caruiifolia* Roxb. has yielded three known coumarins, a new coumarin daphnetin 7-methyl-8-(3,3-dimethyl allyl) ether (50) and a new acid 3,4-dimethoxy-2-hydroxy dihydro cinnamic acid (56).

4. Structure of a minor sesquiterpene lactone (63) from *Inula eupatoriioides* DC has been established by chemical correlation with the major sesquiterpene lactone (59) of confirmed absolute stereochemistry.