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## **Keys to the fruits of the Family Umbelliferae in Oklahoma**

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After studying the general taxonomic features of the Umbelliferae in 1945-1946, it became apparent that a key based on fruiting characteristics only, could be produced for the Oklahoma plants of this family. This paper is a result of a study made for that purpose.

Forty-four species included in thirty genera were examined. No attempt was made to distinguish the indigenous species from the introduced ones, but all available material was used and a key was made for them.

Gratitude is extended to Dr. G. J. Goodman, Curator of the Bebb Herbarium of the University of Oklahoma and to Dr. U. T. Waterfall, Curator of the Herbarium of Oklahoma State University for the loan of collections.

KEY TO THE GENERA

1. Fruits flattened dorsally
  2. Fruits with dorsal as well as lateral wings
    3. Fruits at least 5 mm wide .....1. *Cymopterus*
    3. Fruits less than 5 mm wide .....2. *Thaspium*
  2. Fruits with lateral wings only
    4. Wings thicker than fruits .....3. *Polytaenia*
    4. Wings not thicker than fruits
      5. Styles too short to reach calyx-teeth .....4. *Anethum*
      5. Styles reaching or surpassing base of calyx-teeth when recurved.
        6. Fruits 6-9 mm long .....5. *Lomatium*
        6. Fruits 3-6 mm long
          7. Styles less than 1 mm long, reaching base of calyx-teeth when recurved .....6. *Oxyptis*
          7. Styles more than 1 mm long, reaching well beyond base of calyx-teeth when recurved .....7. *Eurytaenia*
1. Fruits terete or flattened laterally
  8. Length of fruits more than three times their width
    9. Styles 0.5-2mm long
      10. Fruits more than 1 cm long, with remote, appressed hairs .....8. *Osmorhiza*
      10. Fruits less than 1 cm long, glabrous .....9. *Cryptotaenia*
    9. Styles less than 0.5 mm long
      11. Calyx-teeth obsolete; secondary ribs not corky .....10. *Chaerophyllum*
      11. Calyx-teeth prominent; secondary ribs corky
        12. Fruits 8-10 mm long .....11. *Trepocarpus*
        12. Fruits 2-4 mm long .....12. *Limnosciadium*
  8. Lengths of fruits less than three times their width
    13. Fruits with prickles
      14. Prickles silvery, with numerous reduced, lateral projections .....13. *Torilis*
      14. Prickles not silvery, without reduced lateral projections
        15. Prickles obscuring surface of fruits .....14. *Sanicula*
        15. Prickles not obscuring surface of fruits
          16. Prickles retrorsely stellate-tipped .....15. *Daucus*
          16. Prickles straight or recurved-tipped .....16. *Spermolepis*
    13. Fruits without prickles
      17. Fruits glabrous or granular
        18. Stylopodium exceeding calyx-teeth (if calyx-teeth present)
          19. Calyx-teeth obsolete; ribs inconspicuous .....17. *Berula*
          19. Calyx-teeth prominent; ribs conspicuous
            20. Fruits not beaked .....18. *Ptilimnium*
            20. Fruits distinctly beaked .....19. *Cynosciadium*
        18. Stylopodium absent or not exceeding calyx-teeth
          21. Length of fruits less than width
            22. Mericarps semi-globose, unequal in size .....20. *Bifora*
            22. Mericarps strongly flattened laterally, equal in size .....21. *Hydrocotyle*
  21. Length of fruits greater than width
    23. Calyx-teeth obsolete
      24. Stylopodium depressed-conic .....22. *Conium*
      24. Stylopodium lacking .....23. *Taenidia*
    23. Calyx-teeth prominent
      25. Stylopodium lacking .....24. *Zizia*
      25. Stylopodium conic to depressed-conic

26. Calyx-teeth unequal (1 mm long to obsolete in same fruit) .....25. *Coriandrum*
26. Calyx-teeth approximately equal
27. Calyx-teeth narrow at base (space between two teeth as wide as base of each tooth)
26. *Perideridia*
27. Calyx-teeth broad at base (margins in contact or overlapping near base) .....27. *Cicuta*
17. Fruits tuberculate, scaly, pubescent, or having ribs with serrate margins
28. Fruits pubescent .....28. *Angelica*
28. Fruits not pubescent
29. Ribs with serrate margins .....29. *Ammoselinum*
29. Ribs without serrate margins
30. Fruits covered with white scales .....30. *Eryngium*
30. Fruits tuberculate .....16. *Spermolepis*

## Key to the Species

1. **CYMOPTERUS**
- a. Wings enlarged at base .....*C. montanus* (Nutt.) T. & G.
- a. Wings constricted at base .....*C. acaulis* (Pursh) Raf.
2. **THASPIUM**
- a. Fruits long-oval to oblong, mostly 4-5 mm long  
*T. barbinode* (Michx.) Nutt.
- a. Fruits oval, mostly 3-4 mm long *T. trifoliatum* (L.) Gray, var.  
*flavum* Blake
3. **POLYTAENIA**
- One species .....*P. Nuttallii* DC., var. *Nuttallii*
4. **ANETHUM**
- One species .....*A. venenosa* (Greenway) Fern.
5. **LOMATIUM**
- One species .....*L. daucifolium* (Nutt.) C. & R.
6. **OXYPOLIS**
- One species .....*O. rigidior* (L.) C. & R.
7. **EURYTAENIA**
- One species .....*E. texana* T. & G.
8. **OSMORHIZA**
- One species .....*O. longistylis* (Torr.) DC., var. *villicaulis* Fern.
9. **CRYPTOTAENIA**
- One species .....*C. canadensis* (L.) DC.
10. **CHAEROPHYLLUM**
- a. Fruits beakless but narrowed at apex
- b. Fruits less than 2 mm broad; ribs equaling or exceeding intervals  
*C. texanum* C. & R.
- b. Fruits less than 2 mm broad; ribs equaling or exceeding intervals  
*C. procumbens* (L.) Crantz
- a. Fruits distinctly beaked *C. Tainturieri* Hook., var. *dasycarpum* Wats.
11. **TREPOCARPUS**
- One species .....*T. Aethusae* Nutt.
12. **LIMNOSCIADUM**
- One species .....*L. pinnatum* (DC.) Math. & Const.

13. *TORILIS*

One species ..... *T. japonicus* (Houtt.) DC.

14. *SANICULA*

a. Styles exceeding prickles ..... *S. gregaria* Bickn.  
 a. Styles shorter than prickles ..... *S. canadensis* L.

15. *DAUCUS*

a. Prickles numbering more than 12 on each rib ..... *D. Carota* L.  
 a. Prickles numbering less than 12 on each rib ..... *D. pusillus* Michx.

16. *SPERMOLEPIS*

..... *S. inermis* (Nutt.) Fern.  
 a. Fruits nearly smooth to tuberculate  
 b. Fruits with round-tipped tubercles (some nearly smooth)  
     ..... *S. inermis* (Nott.) Fern.  
 b. Fruits with sharp-tipped tubercles *S. divaricata* (Walt.) Britt.

17. *BERULA*

One species ..... *B. pusilla* (Nutt.) Fern.

18. *PTILIMNIUM*

a. Lateral ribs of each mericarp approximately twice the width of other ribs, corky ..... *P. capillaceum* Raf.  
 a. Lateral ribs of each mericarp approximately equaling other ribs, not corky ..... *P. Nuttallii* (DC.) Britt.

19. *CYNOSCIADIUM*

One species ..... *C. digitatum* DC.

20. *BIFORA*

One species ..... *B. americana* (DC.) Wats.

21. *HYDROCOTYLE*

a. Ribs obsolete; dorsal surface rounded ..... *H. ranunculoides* L. f.  
 a. Ribs distinct; dorsal surface acute ..... *H. verticillata* Thunb.

22. *CONIUM*

One species ..... *C. maculatum* L.

23. *TAENIDIA*

One species ..... *T. integerrima* (L.) Drude

24. *ZIZIA*

One species ..... *Z. aurea* (L.) Koch

25. *CORIANDRUM*

One species ..... *C. sativum* L.

26. *PERIDERIDIA*

One species ..... *P. americana* (Nutt.) Reichenb.

27. *CICUTA*

One species ..... *C. maculata* L.

28. *ANGELICA*

One species ..... *A. venenosa* (Greenway) Fern.

29. *AMMOSELINUM*

a. Fruits 3-5 mm long, about 3 mm broad; ribs acute *A. Popei* T. & G.  
 a. Fruits 2-3 mm long, 1-2 mm broad; ribs acute  
     ..... *A. Butleri* (Engelm.) C. & R.

30. *ERYNGIUM*

- a. Styles shorter than to slightly exceeding sepals
  - b. Sepals 5 mm long, spinose-pinnatifid toward apex ..... *E. Leavenworthii* T. & G.
  - b. Sepals 3-3.5 mm long, mucronate at apex ..... *E. diffusum* Torr.
- a. Styles approximately twice length of sepals
  - c. Fruits 4-8 mm long; scales lanceolate, flattened ..... *E. yuccifolium* Michx.
  - c. Fruits 1-2 mm long; scales reduced to low white tuber-like structures ..... *E. prostratum* Nutt.

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