

KEY TO THE SPECIES OF PHYLLOPODA OF OKLAHOMA AND NEIGHBORING STATES

J. G. MACKIN

East Central State Teachers College

1. Without a shell (carapace) Suborder Anostraca 2
 With a shell 10
2. Frontal organ reduced to a small bilobed process, or absent 3
 Head with a well developed frontal organ.
 Family Chirocephalidae 8
3. Clasping antennae of the male ending in a scissor (bifurcate) joint,
 variously twisted and armed; small bilobed median front a 1 process
 present.
 Family Streptocephalidae. One genus:
 Streptocephalus Baird 4
 Clasping antennae of the male without a vestige of a frontal organ,
 last segment not scissored (bifurcate)
 Family Branchinectidae 6
4. Caudal furcae of the male with short conical spines on the distal part,
 feathered setae on the basal part.
 Streptocephalus seallii Ryder 1879
 Caudal furcae with feathered setae over all the length
 5
5. With a small process or lobe near the end of the short (posterior)
 blade of the scissor; short branch of the longer (anterior) blade
 (branch) regularly tapering and sword-shaped.
 Streptocephalus texanus Packard 1871
 No lobe on the short blade near the end; short branch of the long
 blade shaped like a miniature foot.
 Streptocephalus dorothae n. sp.
6. Last segment of the male clasping antennae with a broad internal
 lamina, as long as or longer than the segment.
 Artemia Leach. one species:
 Artemia salina (Linn.)*
 No internal lamina or any kind of process on the distal segment of
 the male clasping antennae.
 Branchinecta Verrill 7
7. Basal segment of the male clasping antennae with a spinose process
 on the middle of the internal border and projecting toward the
 base.
 Branchinecta packardii Pearse 1913
 Basal segment of the male clasping antennae without such process,
 internal border smooth the entire length.
 Branchinecta hindahii Packard 1883*

*Species so marked have not as yet been found in Oklahoma, but are present in one or more bordering states and may be expected to be discovered here.

8. Frontal organ cylindrical, much branched and thickly spinose; caudal furcae broadened into a pair of lateral fin-like organs, rounded posteriorly.

Genus *Thamnocephalus* Packard. one species:
Thamnocephalus platyrurus Packard 1879

Frontal organ a flattened, leaf-like plate with numerous marginal processes, and spinose; caudal furcae unmodified.

Eubranchipus Verrill 9

9. Frontal appendage of the male distinctly asymmetrical, forming a flat sigmoid curve, and with very long processes along one side at the base and short knobs opposite; distal segment of the male clasping antennae with a blunt process half as long as the segment; basal segment without internal processes.

Eubranchipus serratus Forbes 1876

Frontal appendage of the male nearly symmetrical, processes on one side somewhat longer than those of the other, but not exceptionally long; distal segment of the male clasping antennae with only a short rounded process not more than one fourth the length of the segment; basal segment with a small internal process.

Eubranchipus oregonus Creaser 1930

10. Shell a shield-shaped carapace not covering the posterior trunk segments, and not hinged dorsally but keeled.

Suborder Notostraca. one family;

Apodidae 11

Shell bivalve, hinged dorsally; all the body enclosed when the valves are closed.

Suborder Conchostraca 12

11. Telson extended as a long paddle-shaped organ with a median spiny ridge above.

Lepidurus Leach. One species:

Lepidurus couesi Packard 1875*

Telson not extended as a long paddle-shaped organ.

Apus Schaeffer (*Triops*?) One species:

Apus longicaudatus Leconte 1846

(Note: Packard's three species of *Apus*, *A. aequalis*, *A. lucasanus*, and *A. newberryi* are all apparently synonyms of Leconte's species. Studies over a large number of individuals from collections in Colorado, New Mexico, Texas, Kansas, and Oklahoma show that the specific characters now in use in separation of these four species are of little value in taxonomics. The conclusion that the species are synonymous is, however, only tentative, and further study is needed).

12. Shell without growth lines; male with only one pair of hands.

Family Lynceidae. One genus:

Lynceus Mueller

Shell with lines of growth; males with two pairs of hands 14

13. Claw of the male hand brachydactyl, only a short stub present.

Lynceus brevifrons (Packard) 1877*

Claw of the male hand normal, as long as the palm.

Lynceus brachyurus (Mueller)*

14. Head with a dorsal organ; lines of growth indistinct and few in number (up to 10).

Family Limnadiidae. One genus:

Eulimnadia Packard 15

Head without a dorsal organ; lines of growth always distinct and always numbering 13 or over, usually very many more 16

15. Telson with 7 to 9 spines on the dorso-posterior margin; lower angle of the rostrum of the male extended in a long point.

Eulimnadia antlei n. sp.

Telson with always more than 15 spines, usually around 20; lower angle of the rostrum of the male rounded.

Eulimnadia texana Packard 1871

16. Rostrum with a heavy spine at the lower extremity; teeth of the telson numerous and about of uniform size resembling saw teeth; shell very long and narrow.

Family Leptestheriidae. One genus and species:
Leptestheria Sara.

Leptestheria compleximanus (Packard) 1883

Rostrum rounded or pointed but never with a spine; teeth of the telson greatly variant in size, not like saw teeth 17

17. Rostrum shaped like a hatchet blade; with a row of large smooth spines along the mid-dorsal line, one spine for each trunk segment; hand of the male deeply incised at the base of the thumb; shell sway-backed.

Family Estheridae. One genus:

Estheria (sensu strictu) Rueppel. One species:

Estheria concava n. sp.*

(Note: This is the first record of a true Estheria in N. America, the older records under this name being applied to species now recognized as belonging to other genera.)

Rostrum pointed below; each trunk segment armed in the mid-dorsal line with a large medium subspined process; hand not incised at the base of the thumb.

Family Coenestheriidae. One genus:
Coenestheriella Daday 18

18. Lines of growth on the lower third or fourth of the shell much crowded; total number not certainly ascertainable but more than 35; Shell globose, 5 to 6 mm. in thickness; telson spines numerous and small.

Coenestheriella morsei (Packard) 1871

Lines of growth never more than 35 and all easily counted, being more or less regularly spaced and not crowded; shell never more than 4 mm. in thickness 19

19. Lines of growth 27 to 33; umbo far forward on the shell with the apex at the junction of the first and second eighths of the length and all of it distinctly anterior to the $\frac{1}{4}$ mark; mature specimens 9 to 12 mm. long; the thickness of the shell is $\frac{1}{3}$ the length.

Coenestheriella mexicana (Claus) 1860

Lines of growth not exceeding 26; point or apex of the umbo at the junction of the first and second fourths of the length of the shell, or posterior to that point 20

20. Lines of growth 23 to 25; shell unusually high and thick; proportions 1 to 0.74 to 4.47; telson spines 17 to 25; maximum length about 9 mm.

Coenestheriella delfraget (Packard) 1871

Lines of growth 13 to 18; shell not proportionately so thick, proportions 1 to 0.72 to 0.38; telson with 11 to 15 spines; maximum length about 7 mm.

Coenestheriella setosa (Pearse) 1913