Caddisfly, Cranefly, Beetle and Fly Nymphs

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Objectives
Participating young people and adults will:
1. Practice tying procedures for nymph patterns
2. Relate living insects to their imitations
3. Develop skills in communicating fly tying processes
4. Have fun while learning

Youth Development Objectives
Participating young people will develop:
1. Enhanced self confidence and self concept
2. Enhanced ecological understanding
3. Enhanced ability to understand and follow directions
4. Enhanced ability to critique personal efforts
5. Enhanced communication and evaluation skills

Roles for Teen and Junior Leaders
1. Demonstrate individual patterns
2. Assist participants as needed
3. Evaluate flies and suggest improvements
4. Discuss tying and fishing experiences

Potential Parental Involvement
1. See "Roles for Teen and Junior Leaders" above.
2. Arrange for or provide teaching location
3. Arrange for or provide materials and/or equipment
4. Arrange for or provide transportation
5. Arrange for or provide refreshments.
6. Discuss personal experiences in tying or fishing

Best Time: any time, intermediate level

Best Location: well lighted, comfortable area

Time Required: 90 to 120 minutes

Equipment/Materials
tying vise hackle pliers
bobbin bobbin threader
dubbing needle 6/0 black thread
head cement nymph hooks - 2 -3x long
mallard quill black quill
cock pheasant tail mottled turkey quill
brown, black and dun hackles
partridge hackle fine silver wire
fine gold wire fine silver oval tinsel
fine gold oval tinsel flat silver tinsel
olive marabou red marabou
olive floss cream or white floss
red floss fluorescent red floss
cream wool amber wool
muskrat fur mole fur
dark raccoon fur olive rabbit fur
peacock herl peacock sword
coarse sand CA cement
fine brass wire cream latex
clear polyethylene

Safety Considerations
No special considerations

References

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See references in introduction

Evaluation Activities/Suggestions
1. Observe development of tying skills
2. Observe youth and adult interactions
3. Observe improvements in tying skill
4. Observe ability to critique patterns
5. Observe attention to detail and pattern

Lesson Outline

Presentation	Application
I. Scope of this lesson A. Additional groups of aquatic insects 1. Caddisflies 2. Craneflies 3. Aquatic beetle larvae 4. Midges, mosquitoes, blackflies	**NOTE** the additional types of aquatic larva and pupae that can be imitated using the nymphs tied in this section. One of the most important features will be getting the proportions of the different species down.
B. Techniques 1. Fur bodied, ribbed patterns 2. Coarse sand cased caddis 3. Latex bodied nymphs 4. Quill bodied larvae 5. Marabou larvae	Briefly **DISCUSS** the various types of materials that will be used in the nymphs in this lesson.
II. Tying caddisfly larvae and pupae A. Caddisfly larvae types 1. Case bearing caddisfly a. Stone cases b. Detritus cases 1) Stick-cased caddisflies 2) Plant-piece-cased caddisflies 2. Free-living caddisfly larvae	Briefly **REVIEW** some of the species here that may be present in your area, **REFERRING** to the aquatic biology section of the program and **CHALLENGING** the young people to reflect on the ones that they have observed.
B. R. B. caddis 1. Developed by Ray Bergman 2. Pattern a. Hook: wet fly size 10 to 16 b. Thread: 6/0 black c. Tail: peacock sword, short d. Body: cream or white chenille e. Thorax: black chenille OR peacock herl f. Legs: short, black hackle g. Head: tying thread, lacquered	**PASS OUT** and **EXPLAIN** the use of the materials being used in the R. B. (Ray Bergman) Caddis.
3. Tying procedure a. Bind in tips of two peacock sword fibers at tail b. Attach cream chenille c. Carry thread forward to thorax d. Wind chenille body and bind off e. Bind in chenille or peacock herl f. Bind in hackle for legs g. Wind thorax and bind off materials h. Wind legs, bind off and trim I. Clip legs from top and upper sides	**DEMONSTRATE** this pattern, explaining each step in its construction. Keep the peacock sword fibers short, as a clump. **NOTE** that peacock herl produces a more reflective and iridescent pattern that is quite attractive to fish. **EMPHASIZE** that the legs are short and inconspicuous, so the leg hackles should be short and sparse.

j. Wind head, whip finish and lacquer

MAKE the head fairly robust.

C. Trueblood caddis

1. Developed by Ted Trueblood

2. Pattern

a. Hook: wet fly #10 to 16
b. Thread: 6/0
c. Tail: peacock herl - short stubs
d. Rib: fine gold oval tinsel
e. Back: peacock herl
f. Body: medium olive floss
g. Hackle: very sparse, soft brown
h. Head: tying thread, lacquered

PASS OUT the materials for a Trueblood caddis, noting that this pattern also simulates one of the non-case bearing species.

DEMONSTRATE the Trueblood caddis, leaving the finished fly in the vise as a pattern for the participants to use as a model for their own efforts.

3. Tying procedure

a. Bind in peacock herl as a tail
1) Select heavy herl
2) Trim tail short (1/4 to 1/3 inch)

USE heavily fibered peacock herl strands and **TRIM** them quite short after binding them in.

b. Bind in ribbing tinsel

REINFORCE the order in which the materials are bound in as opposed to that in which the are applied.

c. Bind in back material
1) 2-4 heavy peacock herl pieces
2) Let hang over tail for now

d. Apply medium olive floss body
1) Bind in at base of tail
2) Wind double tapered body
3) Bind in at head
4) Trim excess floss closely

NOTE that the floss body can be tied in at the front of the body and double wound to get a more robust body if desired.

e. Pull back forward and bind down

PULL the peacock herl for the back forward, **HOLDING** it tightly in place as it is tied down at the head and as the ribbing tinsel is wound to secure it from tail to head.

f. Apply ribbing material
1) Bind back in place
2) Tie off at head
3) Trim closely

g. Wind head, whip finish and lacquer

FORM a robust head of smoothly tapered tying thread, **WHIP FINISH** it and **APPLY** a drop or two of head cement or lacquer to finish the fly.

D. Cased caddisfly larva

1. Pattern

a. Hook: 2x long - #12 - 14
b. Thread: 6/0 black
c. Underbody: fine chenille or yarn
1) Cream or olive
2) Rear : saturated with cement
d. Overbody: coarse sand
e. Thorax: black chenille OR peacock herl
f. Legs: short black or brown hackle
1) Trimmed on top and upper sides
2) Sparse application
g. Head: tying thread, lacquered

NOTE that this pattern makes use of sand or very fine gravel bits both as a part of the imitation and as weight to get the fly deeper.

PASS OUT the needed materials as you **DISCUSS** the tying process.

KEEP the sand or gravel bits and glue in a single area, so it can be better controlled and to minimize mess.

2. Tying procedures

a. Apply chenille body
1) Attach at rear of shank
2) Wind to shoulder
3) Bind off and trim

DEMONSTRATE the pattern while discussing the process of tying it.

NOTE that yarn can be substituted if desired for a similar effect.

b. Bind in hackle

KEEP the hackle sparse and short to just suggest legs.

c. Apply thorax
1) Bind in chenille or herl
2) Wind to rear of eye
3) Bind in and trim materials

MAKE the thorax a narrow band of chenille or herl, not the longer thorax associated with the earlier nymphs.

d. Wind 3 turns of hackle

TRIM the hackles after they are applied to suggest short, robust

e. Bind down and trim hackle tip
f. Trim hackle fibers
   1) Trim close to thorax material
   2) Trim upper sides and top
g. Wind head, whip finish and lacquer
h. Apply rubber or CA cement to body
   1) Saturate with good cement
   2) Leave narrow ring of body dry
I. Roll glued body in coarse sand
j. Let dry, tap to remove loose sand
k. Repeat if necessary

legs on the larva.

WIND and **WHIP FINISH** the head in the conventional fashion, allowing the fly to dry after being lacquered before the next step.

NOTE that either a good rubber cement (e.g. Barge or Pliobond) or a cyanoacrylate ("super") glue (e.g. Zap-a-Gap) can be used in the next step.
ROLL the glued portion of the fly in the coarse sand or tiny bits of gravel to bind an even layer to the fly. **TAP** it gently on a surface to remove any excess material once the glue has dried. **CAUTION** participants that the weight of the sand can make the fly difficult to cast effectively.

E. Caddisfly pupa
1. Two major types of patterns
   a. Soft hackle patterns
   b. Duck quill winged pupae

SHOW examples of soft hackle and duck quill caddisfly pupae.

2. Partridge and gray caddisfly pupa
   a. Pattern
      1) Hook: sproat wet fly #10-18
      2) Thread: 6/0 black
      3) Body: muskrat dubbing
      4) Rib: fine silver oval tinsel
      5) Hackle: partridge body hackle
      6) Head: tying thread, lacquered

PASS OUT the materials for the partridge and gray caddisfly pupa pattern as you **DISCUSS** the use of the materials in the pattern. A **sproat** pattern or **caddis pupa** hook is advised in size 10 or 12 to ease the first experience.

   b. Tying procedure
      1) Attach thread on bend of hook
      2) Bind in ribbing tinsel
      3) Apply dubbed muskrat body
         a) Roughly dubbed body best
         b) From bend to behind head
      4) Apply ribbing tinsel and trim
      5) Bind in partridge hackle
      6) Wind 1-2 turns of hackle
      7) Bind off and trim at head
      8) Apply ring of dubbing in front of hackles
      9) Wind head, whip finish , lacquer

NOTE that the pupa is curved, so beginning the tie in the middle of the bend is suggested for better appearance.

REINFORCE the notion that a somewhat roughly dubbed body is preferred for these patterns.

NOTE that this type of caddisfly pattern foregoes the wing cases and simply suggests the long legs and antennae of an emerging caddisfly pupa.
ADD a small ball of dubbing to suggest the Ahairy@ head of a caddisfly emerging.

   c. Variations
      1) Olive body
      2) Tan body
      3) Brown body
      4) Blackish body

NOTE that this pattern can be tied in many sizes down to about size 22 and in a range of colors including gray, olive, tan, brown, and a sooty, nearly black, gray to cover the more common species.

3. Olive caddisfly pupa
   a. Pattern
      1) Hook: sproat or caddis #10-18
      2) Thread: 6/0 olive, brown, black
      3) Body: olive fur dubbing
      4) Rib: fine gold wire or oval tinsel
      5) Thorax: olive fur dubbing
      6) Hackle: brown partridge
      7) Wings: short duck wing slips
      8) Head: brown dubbing

NOTE that the major difference between the preceding pattern and this one is the presence of pupal wing cases. **STRESS** that these wings extend under the thorax back toward the curved abdomen and are both short and gray in nearly all species.

PASS OUT these materials as they are discussed.

   b. Tying procedure
      1) Attach thread on bend

START the demonstration fly in similar fashion to the previous

2) Attach ribbing material
3) Dub olive fur on thread
4) Wind dubbing body to thorax
5) Apply ribbing and trim excess

one, extending the body down onto the curve of the hook to create a curved abdomen. **RIB** the body to suggest segmentation.

6) Wind roughly dubbed thorax

LEAVE the thorax dubbing somewhat shaggy, but tightly bound to the hook.

7) Attach and wind in hackle
   a) Leave two long fibers forward
   b) Bind remaining down, back

BIND IN and **WIND** 1-2 turns of brown partridge or grouse hackle. **BIND** all but 2 fibers down as a beard of legs and **EXTEND** the others over the back as long antennae just before winding the head

8) Cut matching duck quill slips
9) Bind in duck quill slips
   a) Short wing cases
   b) Bind in under shank

CUT small slips of matching duck quill (one from each of matched feathers) and **BIND** them in place as short stubs of pupal wings (about 2 to a gap width) like inverted mini-wet fly wings.

10) Trim and finish wing cases
11) Wind small dubbing clump as pupal head
12) Whip finish, cement thread

CUT the stubs of the wings, **FOLD** the antennae back, and **FORM** the head before finishing in the conventional fashion.

c. Variations as above

III. Midge and mosquito larvae and pupae

A. Midge larva

NOTE that true flies come in variety for the angler or tier.

1. General appearance
   a. Worm-like, slender with thorax
   b. Color variations
      1) Creamy white
      2) Pale olive
      3) Tan to brown
      4) Gray

2. Pattern for peacock quill midge
   a. Hook: wet fly or caddis #12-22
   b. Thread: 6/0 black
   c. Tail: 2 black quill fibers, very short
   d. Rib: fine gold or silver wire
   e. Body: peacock quill over brown fur
   f. Thorax: dark brown raccoon fur
   g. Legs: short brown partridge
   h. Head: lacquered tying thread

This is an excellent generalized pattern when the fish are taking midge larvae in the surface film.

PASS OUT the materials needed for the pattern as you **DISCUSS** their use and the utility of the fly.

3. Tying procedure
   a. Bind in 2 very short quill fibers
      1) Grasping organ for larvae
      2) Very short and split
   b. Bind in wire ribbing
   c. Bind in stripped peacock quill
   d. Wind thin, tightly dubbed fur body
   e. Wind peacock quill over fur body
   f. Tie off and trim quill body
   g. Wind rib across quill to thorax as rib
   h. Tie off rib and trim closely
   I. Dub small, rough thorax of fur
   j. Bind in short partridge legs
   k. Wind head, whip finish, lacquer

NOTE that blackfly or similar larvae have a grasping organ, like short forceps on the tip of the abdomen. Curved quill tips do an excellent job of suggesting them.

DEMONSTRATE how to strip a peacock herl for the quill. **USE** the quill over a tapered body to give a segmented appearance.

USE the ribbing material as a means of binding the quill down across each of its wraps.

As above, **MAKE** the thorax somewhat rough.
BIND in the tip of a small partridge hackle as legs.

4. Brassie Nymph
   a. Pattern
      1) Hook: wet or dry fly #14-20
      2) Thread: 6/0 black

GIVE the materials needed to tie the brassie nymph to each participant as the materials are discussed.

3) Body: fine brass or copper wire
4) Thorax: peacock herl
5) Head: tying thread, lacquered

b. Tying procedure

1) Bind in fine copper wire
2) Wind thread smoothly to thorax
3) Wind copper wire to thorax
4) Bind off wire and trim excess
5) Bind in peacock herl
6) Wind peacock herl thorax
7) Form head, whip finish, cement

LEAVE the tail of the wire on the shank to assist in forming a smooth body, then wind both the thread and the wire to the thorax area before tying the wire off and trimming it.

BIND IN and **APPLY** peacock herl as a narrow thorax before forming the head, whip finishing and applying head cement. **SUGGEST** coating the wire with head cement or clear lacquer to keep it from tarnishing.

5. Bloodworm

a. Red chironomid midge larva

b. Pattern

1) Hook: dry or wet fly, #14-18
2) Thread: 6/0 black
3) Tail: small clump of red marabou
4) Body: red floss
5) Rib: fluorescent red floss strand
6) Thorax: peacock herl
7) Head: tying thread, lacquered

NOTE that "bloodworms" are midge larvae with high levels of respiratory pigments in their tissues, giving them a red appearance.

PASS OUT the materials while discussing the pattern for the fly.

c. Tying procedure

1) Bind in a sparse red marabou tail
   a) 10-20 fibers
   b) Trim butts closely
2) Bind in ribbing thread
3) Bind in and apply floss
   a) Carry thread to shoulder
   b) Wind smooth floss body
   c) Bind down and trim floss
4) Apply and bind off rib
5) Bind in peacock herl
6) Wind peacock herl thorax
7) Wind head, whip finish, lacquer

BIND in a sparse red marabou tail that will slick down into a thin, red strip in the water, trimming the butts of the marabou closely.

BIND IN the fluorescent red ribbing material before binding in the red floss for a body material.

WIND a thin, smooth body of red floss, ribbing it with a single strand of fluorescent red floss. **TRIM** the material close at the narrow thorax area.

BIND in and **WIND** a peacock herl thorax and form a small head before finishing as usual.

6. Polyethylene midge

a. Pattern

1) Hook: dry fly #12-16
2) Thread: 6/0 black
3) Underbody: flat silver tinsel
4) Overbody: clear polyethylene
5) Thorax: cock pheasant tail
6) Head: tying thread, lacquered

NOTE that this pattern imitates a group of midge larvae that are translucent.

b. Tying procedure

1) Bind poly strip in at end of shank
2) Bind in tinsel strip over poly
3) Wind smooth thread to head
4) Wind silver tinsel
   a) Smooth layer to thorax
   b) Bind in and trim end
5) Stretch , wind poly strip
   a) Wind to thorax
   b) Bind off and trim excess

NOTE the order of adding the materials to get the materials in order.

STRESS the importance of having a smooth underbody for tinsel. **WIND** the silver tinsel so the turns touch but do not overlap, carrying the tinsel to the thorax area before winding the clear strip of polyethylene.

6) Bind in pheasant tail fibers
a) Wind as robust thorax
b) Bind off at head
7) Wind, whip finish, lacquer head

WIND several cock pheasant tail fibers as a thorax before adding a small head of tying thread.

B. Midge pupa

1. Peacock quill midge

a. Pattern

1) Hook: wet or dry fly, #16-22
2) Thread: 6/0 black
3) Tail: sparse dun hackle fibers
4) Rib: fine silver wire
5) Body: stripped peacock herl
6) Thorax: dubbed dark brown raccoon or rabbit fur
7) Head: tying thread, lacquered

NOTE that this pattern is adaptable to many species and suggestive of midge pupae.

PASS OUT the materials needed for the pattern as it is discussed.

b. Tying procedure

1) Bind in tail, half shank length
2) Bind in ribbing material
3) Bind in stripped peacock herl
4) Wind thread smoothly to thorax
5) Wind rib to shoulder, bind off
6) Dub short, heavy thorax
7) Wind head, whip finish, cement
8) Pick out dubbing to suggest legs

BIND in a short tail, perhaps up to half the shank length long.
KEEP the tail sparse, leaving the excess material as part of the underbody before tying in the rib and stripped peacock herl.

WIND the ribbing across the peacock herl to the shoulder.
DUB a short, heavy thorax of dark brown raccoon or rabbit fur.
ADD a head, whip finish and cement the head.
PICK out the dubbing slightly to leave strands as legs.

2. Olive midge pupa

a. Pattern

1) Hook: dry fly #12-18
2) Thread: 6/0 black
3) Rib: fine oval gold tinsel
4) Body: olive dubbing
5) Thorax: mole fur dubbing
6) Wing pads: pale dun hackle tips OR short, sparse white marabou

PASS out the materials for the olive midge while discussing the pattern.

NOTE that this is a good general pattern for larger midges.

b. Tying procedures

1) Bind in ribbing material
2) Apply dubbed olive fur body
3) Wind rib and bind off at thorax
4) Dub thorax of dark gray mole
5) Bind in wing pads
6) Wind head, whip finish, lacquer

DEMONSTRATE the tying procedure for this pattern, leaving the finished fly in the vise as a model.
FORM a slightly curved body of olive fur dubbing, leaving it rough and ribbing it with oval gold tinsel.
ADD a thorax of dark gray mole fur dubbing,
BIND in short wings of dun hackle tips or marabou to suggest emerging wings.

IV. Cranefly larvae

A. Pattern

1. Hook: 3x long nymph
2. Thread: 6/0 black or brown
3. Rib: fine gold wire
4. Underbody: cream or pale amber floss
5. Overbody: creamy latex strip
6. Head: small, tying thread lacquered

DISCUSS the cranefly larva while reviewing the pattern and passing out the materials for the pattern.

NOTE that dental dam or glove material can be used, adding layers if necessary to make a robust body.

B. Tying procedures

1. Bind in ribbing wire
2. Bind in latex strip
3. Bind in underbody material
4. Carry thread to eye of hook
5. Wind robust underbody to eye, bind off

BIND in the ribbing, latex strip and underbody floss in that order before carrying the thread to the eye of the hook.

WIND the underbody in a robust body to the rear of the eye,

6. Wind stretched latex strip in three layers to eye and bind off	binding it down and trimming the excess away. **FOLLOW** it with 1 to 3 layers of stretched latex, making the body look translucent.
7. Wind open rib to imply segmenting	**WIND** the ribbing tightly, giving the material a segmented appearance.
8. Bind off rib and trim off excess	
9. Form small head and finish as usual	**FORM** a very small head and finish conventionally.

V. Riffle beetle larva

A. Pattern

1. Hook: 2-3x long nymph, #12-18	**NOTE** that riffle beetles come in a variety of colors and sizes, often being important in the diet of stream or slack water fishes.
2. Thread: 6/0 black of dark brown	
3. Tail: pale olive marabou, sparse and short	**DISCUSS** the pattern while passing out the materials needed to tie it.
4. Rib: fine gold wire	
5. Body: pale olive (creamy) fur	
6. Thorax: dubbed olive fur	
7. Legs: very short sparse brown hackle	
8. Back of thorax: slip of mottled turkey	
9. Head: robust of tying thread, lacquered	

B. Tying procedure

1. Bind in a tail	**START** the pattern with a short, sparse tail of pale olive marabou.
a. Pale olive or tan marabou	
b. Sparse and short	
c. Tied split slightly	
2. Bind in ribbing material	
3. Apply dubbed fur body	**BIND** in the ribbing wire or tinsel before applying a tightly dubbed fur body. **NOTE** that this pattern requires a very pale olive fur and that it should finish quite close to the eye.
4. Apply, bind off and trim ribbing	
5. Bind in quill slip for thorax back	**BIND** in a mottled turkey quill strip as the back of the thorax, then a hackle for legs, and dub over them in a narrow band.
6. Bind in leg hackle	
7. Wind short, dubbed thorax	
8. Wind leg hackle and bind it off	**WIND** a narrow hackle and bind it off, then **WIND** the hackle over it. Pull the thin strip of turkey quill forward and bind it in place, trimming it closely.
9. Pull back forward and tie it off	
10) Wind a head about thorax size	**WIND** a stout head about the same size as the thorax and finish as usual.
11) Whip finish and lacquer head	

C. Variations

1. Sizes to match local species	
2. Colors to match local species	

VI. Fishing them

A. Dead drift	**NOTE** that the fishing process for most of these nymphs emphasizes dead drift or very slow movement, but that all the techniques discussed in the first nymphs lesson can be useful.
B. Active retrieve	
1. Hand-twist	
2. Short strips	
3. Rod lift and strip	

Summary Activity

1. Have participants review the series of flies they have tied and critically analyze their technique. Discuss techniques and ways of improving them.
2. Arrange a fishing trip where the nymphs tied in this exercise can be fished, assisting young people with their angling technique.

Lesson Narrative

This lesson considers methods and patterns designed to suggest or imitate caddisflies, craneflies, aquatic beetle larvae, and aquatic fly larvae like midges and blackflies. The techniques used include fur bodies, latex bodies, quill bodies or quill ribbed bodies, and even bodies covered partially with coarse sand or finely divided gravel.

Tying Caddisfly Larvae and Pupae
Caddisflies are extremely abundant aquatic insects, occurring in a wide range of environments. Some species of caddisflies make cases for themselves of pebbles, sand grains, small twigs or pieces of leaves or other detritus. A few of them anchor those cases to rocks. Others carry them around with them. Still other caddisflies build nets to capture their food, living at the apex of the net and without the protection of a self-made shell. Caddisfly larvae and pupae are commonly observed with creamy, olive, tan, brown, gray or nearly black bodies. In angler shorthand, caddisfly is often reduced to "caddis." Further, case-bearing species are often imitated by patterns that resemble the living insect inside the case, not the cased insect itself.

Tying the R. B. Caddis
Ray Bergman developed the R. B. Caddis as an imitation of the "caddis worm" found in stick or pebble cases, a favorite food of early spring trout. Often, headwaters trout will have skinned noses from grubbing these foods out of the gravel in their low nutrient level streams. The pattern is as follows.

Hook: wet fly size 10 to 16
Thread: 6/0 black
Tail: peacock sword, short
Body: cream or white chenille
Thorax: black chenille OR peacock herl
Legs: short, black hackle
Head: tying thread, lacquered

Start the fly by tying in two peacock sword tips as a tail. Bind in a piece of cream chenille over the tail tied-down area with several turns of thread and carry the thread forward to the shoulder area. Open turns of thread are perfectly acceptable here, since the bulky chenille will cover any minor variations in shank thickness caused by the thread. Wind the chenille forward to the narrow thorax area (this should only be about ⅁ of the shank length), keeping the wraps tight and close together. Bind the chenille down at that point with several turns of thread, and trim the excess material away neatly. Next bind in one or two strands of heavy peacock herl, followed by a hackle feather with short barbs. Wind the herl to form the thorax and head of the fly, tying it off and trimming away the excess. Wind the hackle sparsely to the back of the hook eye and bind it off before trimming the excess hackle neatly. Wrap a neat head, whip finish, and apply a drop or two of head cement or lacquer to complete the tying process. Once the fly is complete, use your scissors to trim any hackle fibers from the top and upper sides of the fly, leaving only those on the lower sides and bottom as legs. To observe a natural insect that inspired the pattern, locate a stick-cased or pebble cased caddisfly larva and remove the outer covering to expose the animal inside.

Tying the Trueblood Caddis
This pattern was developed nearly a continent away from the R. B. Caddis by Idaho outdoor writer, Ted Trueblood. While I cannot be certain, I believe he designed the pattern to simulate a net-making caddisfly found in Rocky Mountain streams and attractive to the native cutthroat trout in his area. The pattern follows.

Hook: wet fly #10 to 16
Thread: 6/0
Tail: peacock herl - short stubs
Rib: fine gold oval tinsel
Back: peacock herl
Body: medium olive floss
Hackle: very sparse, soft brown
Head: tying thread, lacquered

Although a bit more complex that the previous pattern, this one is also a relatively simple pattern to tie. In addition to suggesting segments, the rib is important in keeping the peacock herl back intact once fish teeth encounter it. Start by binding in 2-3 strands of heavy peacock herl as a tail. Trim both ends, leaving the

protruding portion of the tail approximately 1/4 to 1/3 inch beyond the end of the shank. Next bind in the fine, oval gold tinsel ribbing, followed by 2-4 strands of peacock herl that will form the back. (The same strands of herl cut away in forming the tail will likely serve the purpose, conserving your materials.) Let these materials project over the tail for now, and carry the thread to the eye of the hook, leaving a small space for tying the head. Bind in a piece of medium olive floss (I much prefer 4-strand floss because of its handling qualities, but you pick what you like). Wind a smooth body back to the tail tie-down area and return to cover the tie-down area for the floss, forming a double tapered body with a cigar shape. Bind the floss down and trim the excess. Next, bind in a soft brown hackle with short barbs to serve as legs for the pattern. Trim away the butt of the hackle, wind a single turn, and bind it in. Trim the excess material away, pull the hackle fibers down and back, and bind them in place with several turns of thread. Then, pull the herl forward and bind it down at the head while holding it in place over the back of the fly. Trim the excess herl neatly and bind it down with thread. This also starts building the head of the fly. Once the herl back is secured, wind the ribbing tinsel from the tail to the head in open spirals, keeping the back in place as the tinsel binds it down. Anchor the tinsel with several turns of thread and trim the loose end neatly. Form a nicely tapered head, whip finish the thread, and apply a drop or two of head cement to finish the fly.

Tying a Cased Caddisfly Larva

Many tiers have attempted to make a pattern that looks like a case-bearing caddisfly larva, having seen these critters, pebbles and all, in the stomachs of trout. The case adds weight as well as realism, and may keep the pattern on the bottom where it is most effective. The pattern, with a variation or two, is listed below.

Hook: 2x long - #12 - 14
Thread: 6/0 black
Underbody: fine chenille or yarn (cream or olive, rear : saturated with cement)
Overbody: coarse sand or cracked bits of gravel
Thorax: black chenille OR peacock herl
Legs: short black or brown hackle (sparse, trimmed top and upper sides)
Head: tying thread, lacquered

The basic tying procedure is similar to those used for the two flies above until the pattern is ready to remove from the tying vise. The chenille or yarn body is attached at the rear of the hook and wound to the shoulder before being bound off with thread and trimmed. A hackle is bound in along with a piece of peacock herl or black chenille in front of the body. A narrow thorax of herl or chenille is wound to the back of the head, the hackle is applied as above, and the head is finished in the usual manner. The hackle fibers are trimmed to leave only those on the lower sides and bottom of the pattern. The final operation is to saturate most of the body, leaving a narrow band of light material in front, with either a good rubber-based cement or a “super” glue designed for fishing applications. Once the glue has been applied, roll the fly through coarse sand or very fine pebbles, covering the glued area of the body completely. Give the glue a few minutes to dry and knock off the excess by tapping the fly gently over the sand or pebble pile. Repeat this process if necessary or simply fill in gaps that are not covered in the first attempt. [Leader’s note: I like to restrict the sand or gravel and glue to one area that is well covered with newsprint or other absorbent paper. This keeps the mess to a minimum and helps with clean-up time.] You may want to warn beginning fly fishers that this fly is quite heavy and may come in low on a poor back cast. It should be used cautiously until the youngsters are used to its behavior and their casting technique is adequate to handle weighted flies.

Caddisfly Pupae

Because caddisflies in all forms are high priority fish foods in many waters, flies that suggest or imitate them are important to the angler. Frequently, when the fish are feeding on hatching adults or even egg-laying adults, they will also hit pupal imitations. There are two general types of caddisfly pupal patterns, soft hackle types without wing pads or pupal wings and quill-winged pupae. We will tie a pattern of each type that can be modified in size and color to cover most situations where caddisfly patterns should be dead drifted or fished in the film. Since they are a bit less complex, we will start with a soft hackle pattern. The pattern for a partridge and gray caddisfly pupa follows.

Hook: sproat wet fly or caddis #10-18
Thread: 6/0 black
Body: muskrat dubbing
Rib: fine silver oval tinsel
Hackle: partridge body hackle
Head: tying thread, lacquered

Tying a Soft Hackle Caddisfly Pupa - Partridge and Gray
Since caddisfly pupae tend to be curved toward the underside of their bodies, start the pattern by attaching the thread about half way into the bend. Bind in the ribbing tinsel, leaving it hang for the moment. Pluck a bit of gray muskrat fur from the skin, remove the guard hairs, and dub it on the tying thread, forming a yarn-like strand. Wind the dubbed fur nearly to the head of the fly. Note that the body should become more robust as it is wound forward on the hook and that leaving the dubbing somewhat rough can be useful in catching fish. Bind the dubbing off, removing any excess fur for later use. Apply the fine oval silver tinsel as a rib, carrying it the whole way to the front of the body in open spirals. Be sure to use enough pressure to hold the ribbing firmly in place when the fly is bitten. Bind the ribbing off with several tight turns of thread, and trim the loose end closely. Then, bind in a fairly long partridge hackle (body feather). Wind 1or 2 turns of hackle and bind the remaining material off with tying thread wraps. Trim the tip of the hackle feather away neatly. Pull the fibers back slightly and wrap around the bases to slant the collar of hackle back toward the point of the hook. Form a small ball of rather shaggy dubbing in front of the hackles, then form a small, neat head and finish it conventionally. [Note that the hackle fibers used in this pattern should reach beyond the end of the hook if swept back fully. Relatively long legs and antennae are present on caddisfly nymphs, and the hackles simulate them.]

Variations on this pattern can be used for a wide variety of caddisfly pupae. Tie them in sizes from about 10 to 22 with bodies in olive, tan, brown, or blackish gray as well as gray, using either brown or gray partridge as hackles. Note that many traditional English or Scottish wet flies use a similar approach, e.g. the Teal and Orange for fishing either midges or sedges.

Tying the Olive Caddisfly Pupa
The olive caddisfly pupa is an example of the duck quill winged caddisfly pupa type. It can be tied in a wide variety of colors and sizes to simulate the flies being fed upon by the fish you are seeking. I would suggest sticking with a fairly large example with beginning tiers, pushing them toward smaller versions as their skills develop. The pattern being used in this fly follows:

Hook: sproat or caddis #10-18
Thread: 6/0 olive, brown, black
Body: olive fur dubbing
Rib: fine gold wire or oval tinsel
Thorax: olive fur dubbing
Hackle: brown partridge
Wings: short duck wing slips
Head: brown dubbing

This pattern, like the one previous, suggests a natural insect that has a downward curved abdomen. As a result, it is best tied on a sproat or caddis type hook and started about midway on the bend of the hook. Start by binding in the fine gold wire or oval tinsel to be used as a rib. For hooks size 16 and smaller, wire is preferred for proportion; but use the material of your choice. Pluck a bit of olive rabbit fur (or other dyed fur) from the skin and remove the guard hairs. Dub the fur on the tying thread, forming a somewhat shaggy olive fur yarn. Wind the dubbing material forward to the thorax area, and bind it off, reserving any remaining fur for the thorax. Apply the ribbing in an open spiral, using enough pressure to firmly seat the rib in the dubbed fur body. Bind off the rib and trim the excess material neatly. Using a somewhat more coarsely dubbed bit of olive fur, form a short thorax, leaving enough room for the fur head. Bind in and wind a turn of brown partridge or grouse hackle. Bind that hackle off and trim away the excess. Pull all but two of the fibers down and back toward the bend of the hook, winding over them to hold them in place as a long, sparse beard. Prepare the wings by clipping narrow, matched slips of mallard quill from

matching flight feathers. Hold the tips of the feather slips down and back under the thorax, providing a wing about half or less of the gap width in length on either side of the thorax. Trim away the butts of the wings and wind over them to set the wings in place. Dub a small amount of dark brown fur (e.g. raccoon) on the thread and wind a small, shaggy ball as a head. Bend the two remaining hackle fibers back over the back of the fly, and wrap a turn or two of thread over their bases to fix them in place. Wind a small Ahead,@ whip finish, and apply head cement to complete the fly.

Like the soft hackled version of the caddisfly pupa, this pattern will get better with use and abuse by the fish. It can be tied in a wide variety of sizes from about size 10 to size 22 and in a wide variety of colors to approximate the colors of the natural insects being taken by the fish at the time. Observe and experiment to see which ones are important in your area.

Tying Midge and Mosquito Larvae and Pupae
Midge larvae tend to be fairly slender, worm-like animals with a thorax. They vary in size and color from tiny, nearly clear-bodied individuals to bright red "bloodworms" that may be an inch or more in length. They may be creamy white, pale olive, translucent pearl, tan to brown or gray. Many of them can be suggested with simple types of ties. The pattern for a peacock quill midge follows.

Hook: wet fly or caddis #12-22
Thread: 6/0 black
Tail: 2 black quill fibers, very short
Rib: fine gold or silver wire
Body: peacock quill over brown fur
Thorax: dark brown raccoon fur
Legs: short brown partridge
Head: lacquered tying thread

This pattern does a pretty good job of suggesting a blackfly larva, a species that forms the foundation of the food chain in many northern waters, at least during parts of the year. The larva is equipped to hold fast to rocks, branches or other submerged structures, sometimes completely covering the surface of the bottom. They are about the length of a size 16 or 18 hook shank, fairly robust and colored much like a dark, stripped peacock quill. Thus this pattern is an excellent one to use during their emergence period. It also works as a generalized dark midge pattern throughout the year in a variety of sizes.

The tying procedure starts with binding in a pair of very short wing quill fiber tips at the end of the shank. These can be divided using a figure 8 pattern. Bind in a piece of silver wire for ribbing material, followed by a stripped peacock herl. [To strip a peacock herl, simply hold the herl between the thumbnail and fingernail of one hand while drawing it through them with the other hand. Repeat the process until all the barbules ("flue" to a fly tier) is removed, leaving only the quill itself.] Using dark brown raccoon dubbing material, apply a thin, tapered fur body to the thorax area. [Like the previous set of larvae, the thorax is fairly small, about twice the area needed for a head.] Wind the peacock herl over the fur body to the thorax and bind it off, trimming away the excess. Next, wind the silver wire rib in the opposite direction, catching the herl on every turn, to the thorax, binding it in and trimming the excess material away. Dub a small, rough thorax of raccoon fur. If desired, add a small bunch of short brown partridge or grouse hackle as legs. Wind a neat head, whip finish and lacquer the head. Apply a drop or two of lacquer or head cement to the quill body as well. This will make it tougher and give it a more segmented look.

The Brassie Nymph
The brassie nymph is a quick sinking fly that can get deep even in the smaller sizes. A very simple tie, it has a very simple pattern as well.

Hook: wet or dry fly #14-20
Thread: 6/0 black
Body: fine brass or copper wire
Thorax: peacock herl
Head: tying thread, lacquered

Begin tying the brassie nymph by binding in a piece of fine brass or copper wire. Leave the wire along the shank from the tie-down area to the area where the body will end, and wind over it with closely spaced wraps of thread to form a very smooth base for the wire. Wind the wire over the wire and thread base to the thorax (about twice the head length) and bind it off. Bending the wire to break it will leave a cleaner edge than cutting it, but it can be cut if you cover the wire completely with thread, being careful not to cut the thread in the process. Bind in a single strand of peacock herl at the front of the wire body. Carry the thread forward to the base of the eye, and let it hang. Wind several turns of peacock herl to create a thorax, binding it off at the head. Trim the excess herl away neatly. Form a head of tying thread, whip finish, and apply a coat of head cement or clear lacquer to the head and the wire. A second coat may be advised, since it will protect the wire even better from corrosion. For very small flies, wire scavenged from a fine electrical cord is just about right. For larger ties, fine wire from the hardware store will do nicely.

Tying a Bloodworm
Bloodworms are chironomid midge larvae with an abundance of respiratory pigment in their blood. The bright red pigment shows through their translucent bodies, giving them the appearance of slender blood red worms. This pattern uses red marabou to suggest the wiggling body of a bloodworm.

Hook: dry or wet fly, #14-18
Thread: 6/0 black
Tail: small clump of red marabou
Body: red floss
Rib: fluorescent red floss strand
Thorax: peacock herl
Head: tying thread, lacquered

Start the pattern by tying in a small clump of red marabou at the rear of the shank. Bind in a strand of fluorescent red floss and a strand of red floss over the butts of the marabou. Wind the red floss forward making a slim (about the thickness of the marabou clump when it is thoroughly wet and sticking together) cylindrical body to the shoulder. Bind it off and trim away the excess floss. Spiral the fluorescent red floss strand over the red floss body to the shoulder. Winding it in the opposite direction from the body wrap will create a more easily seen rib, since it will not tend to sink into the other material as much. Bind off the rib, and trim away the excess. Bind in a single peacock herl and carry the thread forward to the head area. Wind several turns of herl, making a thorax slightly thicker than the body. Bind down the tip of the herl and trim away the excess material. Wind a compact, smooth head, whip finish, and apply a drop or two of lacquer to finish the fly.

Tying a Polyethylene Midge
The polyethylene midge is a translucent midge with a silvery shine and a rusty brown thorax. The pattern is a simple one.

Hook: dry fly #12-16
Thread: 6/0 black
Underbody: flat silver tinsel
Overbody: clear polyethylene
Thorax: cock pheasant tail
Head: tying thread, lacquered

This pattern begins by binding in a narrow strip of clear polyethylene. Bind in a strip of mylar tinsel over the polyethylene strip. Wind the thread to the head, making a smooth underbody for the tinsel. Wind the tinsel to the thorax area and bind it off with the tying thread, trimming away the excess material. The wraps of tinsel should touch but not overlap, keeping the body smooth. Next stretch and wind the polyethylene strip in one to three layers to the thorax area, binding it off and trimming away the excess material. Bind in several cock pheasant tail fibers and carry the thread forward to the head area. Wind the pheasant tail fibers to make a robust, but narrow thorax. Bind the fibers off and trim the excess material

before winding the head. Wind a smooth head, whip finish the thread and coat it with a drop or two of head cement to complete the fly.

Tying a Peacock Quill Midge Pupa
The pattern for a peacock quill midge pupa follows.

Hook: wet or dry fly, #16-22
Thread: 6/0 black
Tail: sparse dun hackle fibers
Rib: fine silver wire
Body: stripped peacock herl
Thorax: dubbed dark brown raccoon or rabbit fur
Head: tying thread, lacquered

This pattern starts with binding in a tail about half the shank length long. The tail should be sparsely tied using dun hackle fibers. A piece of fine silver wire is tied in at the base of the tail before binding in a stripped peacock herl. The thread is carried forward to the thorax very closely to form a smooth underbody for applying the stripped herl. Wind the stripped herl closely with the layers touching but not overlapping to the thorax area. Bind it off and trim away the excess material. Wind the silver wire as a rib, either in the same direction as the herl or across the herl to bind it on each turn. Bind off the wire and trim away the excess. Dub a short, heavy thorax of dark raccoon or dyed brown rabbit. Wind a small head, whip finish the thread and apply head cement to the head. Apply a drop or two of thin head cement or lacquer to the body to toughen it and to make its segmentation stand out better. Pick out the dubbing slightly in the thorax to suggest legs.

Tying an Olive Midge Pupa
The pattern for the olive midge pupa follows.

Hook: dry fly #12-18
Thread: 6/0 black
Rib: fine oval gold tinsel
Body: olive dubbing
Thorax: mole fur dubbing
Wing pads: pale dun hackle tips OR short, sparse white marabou
Head: tying thread, lacquered

The olive midge larva can be used as a generalized midge pupal pattern. Start the pattern by binding in the ribbing material slightly into the bend of the hook. Build a tapered body of dubbed olive fur to the shoulder area. Wind the ribbing tinsel to the thorax area and bind it off. Dub a thorax of dark gray mole fur. Bind in wing pads to suggest pupal wings over the thorax. Wind a smooth head, whip finish the thread and apply one or two drops of head cement to finish the fly.

Tying Cranefly Larvae
Adult crane flies look similar to very large, slow moving mosquitoes. Most of them do not feed as adults and live only a few days. The larvae resemble huge maggots. Called leatherjackets or oak leaf worms, they live in the water or along the edges of streams among the detritus and live vegetation. Legless, the larvae are slow moving with a worm-like motion. They can swim by making sinuous motions in the water. They are relished by fish and large enough to attract a wide array of fishes. The pattern for the cranefly larva follows.

Hook: 3x long nymph
Thread: 6/0 black or brown
Rib: fine gold wire
Underbody: cream or pale amber floss
Overbody: creamy latex strip
Head: small, tying thread lacquered

Start tying the cranefly larva by binding in a piece of fine gold wire at the rear of the shank. Bind in a strip of latex from either a piece of creamy dental dam material or one cut from a latex glove. Bind in a piece of cream or pale amber floss or yarn, winding it smoothly to the head area in a cylindrical form. Bind the material off at the back of the head area and trim away the excess. Wind a stretched strip of latex over the core to the eye. If a thicker body is desired, continue winding back to the rear of the hook and forward to the eye again. The latex strip should give the body a translucent appearance. Bind off the latex and trim it closely at the eye. Wind the gold wire rib in even spirals to the head, representing segmenting on the nymph. Bind it off and trim it at the head, then wind, whip finish and apply head cement to finish the fly. Keep the head as small as possible.

Tying Riffle Beetle Larvae

Riffle beetles are elongate larva with small legs on their thorax and biting jaws on a fairly large head. The larvae are about the same diameter from one end to the other, roughly cylindrical in shape. They are variable in size and color, and generally found among the bottom rubble in streams. Similar larvae, those of diving beetles, are found among in still water. The pattern chosen to demonstrate the beetle larvae is an olive riffle beetle. The pattern is listed below.

Hook: 2-3x long nymph hook size 12-16
Thread: 6/0 black of dark brown
Tail: pale olive marabou, sparse and short
Rib: fine gold wire
Body: pale olive and creamy tan fur
Thorax: dubbed olive fur
Legs: very short sparse brown hackle
Back of thorax: slip of mottled turkey
Head: robust of tying thread, lacquered

Start this pattern by tying in a sparse bunch of pale olive marabou at the tail and trimming it short. Separate the tail into two bunches. Bind in a strip of fine gold wire as a rib. Mix olive and creamy tan fur to produce a somewhat mottled dubbed yarn. Wind the dubbing material nearly to the head area and bind it off. Wind the ribbing wire to the shoulder, bind it off and trim the excess away. Bind in a narrow, heavily marked slip of mottled turkey quill as a back to the small thorax. Bind in a brown hackle with short fibers to simulate legs. Wind a short thorax of the same material as the body. Wind 2 or 3 turns of short hackle over the thorax and bind it off at the back of the head area. Trim away the tip of the hackle and the fibers from the top and upper sides. Pull the wing case over the thorax and bind it down at the back of the head area. Wind a generous head, approximately the size of the thorax, whip finish the head and apply a drop or two of head cement to finish the fly.

Fishing Them

Most of the patterns included in this set of flies are best fished with a dead drift or a very slow retrieve. Some anglers like to impart a twitching motion to the midge larvae to simulate their sinuous swimming motions. The same approach can be useful with cranefly larvae. Beetle larvae can be very active when they are dislodged from their cover. Use the same approaches as were discussed in the previous nymph lesson or wet fly lessons if these methods fail you.

Exhibit or Sharing Suggestions

1. Prepare a poster, models or photographs to show the steps in tying one of the nymph patterns listed.
2. Study pattern books or tying magazines to locate other types of nymphs that imitate the flies discussed in this lesson.
3. Prepare a method demonstration on tying a pattern of your choice.
4. Prepare a photographic story of tying one or more nymphs from the beginning of the tying process to fishing them.
5. Record your tying and fishing experiences in a journal. Share that journal with others in an appropriate setting.
6. Make a series of flies and fly pattern cards that can be exhibited at a fair or similar gathering.

7. Try variations of these nymphs that are designed to suggest natural insects you have observed. Fish them to see how they work and compare them to established patterns. Share your results with friends or your group.

Community Service and "Giving Back" Activities

1. Consider ways of helping other young people learn how to tie flies, setting up tying clinics or instructional programs for interested people.
2. Tie a set of flies that can be used as auction items or door prizes in community events or fundraisers.
3. Donate flies to a local fishing program.
4. Participate in a National Hunting and Fishing Day celebration by demonstrating fly tying for local people.
5. Use your observations of insect life in your favorite waters to help in monitoring the water quality. Consider joining a water watchers group or a similar group that contributes data to conservation agencies.

Extensions or Ways of Learning More

1. Sample the organisms living in the streams or lakes you normally fish. Using your tying skills, try to produce a pattern that simulates the prey items you have found after researching fly patterns to see if a suitable pattern exists.
2. Collect stomach contents from fish you catch. Preserve samples of those stomach contents in 70 percent alcohol, labeling each sample with the date, location and fish from which it was taken. Record your observations in a notebook and determine if their food habits are the same all through the year or if they change with the time of day and season. Use references to entomology or other fields to assist in identifying what the fish are eating and attempt to create a seasonal reference to their favorite foods.
3. Create a series of patterns, changing only one item at a time. Fish each of them equally, and observe the reactions of the fish to each sample. Record your observations, and try to determine the elements in a pattern that are being used by the fish to select their “food.”

Links to Other Programs

The link to the rest of the sportfishing program is obvious. Fly tying is a natural link to fly fishing as well as to crafting other types of tackle. Rod building can be a means of having an excellent fly rod at a lower cost. The feathers, furs and other materials needed by a fly tier can lead to interests in hunting, trapping, waterfowl, poultry science or other seemingly unrelated fields. Understanding aquatic ecology as well as keen observation skills are important to success in both tying and fishing flies. This can provide entry into the sciences, either as a future vocation or as an avocational activity. Fishing flies can lead to an interest in several fields of engineering. Tying flies can be a great introduction to economics and marketing for young entrepreneurs. Finally, the hobby of tying flies is both craft and art. It can lead into many other areas of activity from writing and photography to science.