



Stonefly, Fishfly, Dobsonfly, Damselfly and Dragonfly 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: 60 to 90 minutes

Equipment/Materials

tying vise hackle pliers bobbin
 bobbin threader dubbing needle
 head cement vinyl cement black lacquer
 6/0 thread (black, brown, primrose, orange, pale orange, olive)
 nymph hooks - 2x-4x long - #4, 8, 10,12, 14, 16
 wet fly hooks ringed eye - 2x long
 mottled turkey quill (yellow, brown, natural)
 turkey pointer (gray, dark brown)
 goose quill (black, yellow) duck quill
 brown, dark dun, ginger, grizzly, olive hackles
 black, brown, dun, olive hen hackle
 partridge hackle (gray, brown, olive, yellow)
 black chenille yellow chenille
 lead wire 0.030 fine gold oval tinsel
 fine wire (silver, gold)
 dull orange, yellow, black yarn
 floss (silver gray, yellow,orange)
 brown buttonhole thread brown perm. marker
 dubbing (olive and black rabbit, brown, amber and tan fox, dark racoon, muskrat, mole)
 peacock herl natural deer hair
 mallard flank wood duck flank
 stiff plastic strips clear plastic
 duck quill marabou (black, brown)

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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

larva lace (black, yellow) stiff monofilament
mono eyes (olive, black) bead chain

Safety Considerations

No special considerations

References

Lesson Outline

Presentation

- I. Scope of this lesson
 - A. Additional groups of aquatic insects
 1. Fishflies, alderflies and dobsonflies
 2. Stoneflies
 3. Damselflies and dragonflies
 - B. Techniques
 1. Fur bodied, ribbed patterns
 2. Woven bodied flies
 3. Clipped hackle and deer hair flies
 4. Wiggle nymphs
- II. Fishflies, alderflies and dobsonflies
 - A. Description and habitat
 1. Robust, predatory larvae
 2. Heavy abdominal gills
 3. Well oxygenated water with rubble
 4. Heavily depredated by fish
 - B. Fishfly and alderfly larva
 1. Fishfly larva
 - a. Pattern
 - 1) Hook: 2x long nymph hooks
 - 2) Thread: 6/0 black
 - 3) Body: black dubbing or yarn
 - 4) Hackle: palmered black, clipped
 - 5) Head: tying thread, lacquered
 - b. Tying procedure
 - 1) Bind in hackle at rear of shank
 - 2) Bind in yarn or start dubbing
 - 3) Carry body to head area
 - 4) Palmer hackle to head
 - 5) Bind and trim hackle tip
 - 6) Wind head, whip finish, lacquer
 - 7) Trim hackles about 1/3 gap width
 2. Strawman nymph
 - a. Pattern
 - 1) Hook: 2x long nymph
 - 2) Thread: 6/0 black
 - 3) Tail: mallard flank
 - 4) Body: clipped deer body hair
 - 5) Rib: amber or yellow floss
 - 6) Hackle: partridge (optional)
 - 7) Head: tying thread, lacquered

Application

NOTE that this nymph lesson includes both additional groups of aquatic insect larvae and additional tying techniques that can be applied to all situations.

Briefly **DESCRIBE** and **SHOW** illustrations of the insect groups represented.

EXHIBIT specimens of these species or illustrations showing their anatomy

DISCUSS their habitat and fishes that may feed on them in your local area.

PASS OUT the materials needed to tie the fishfly larva while discussing the materials and their use in the pattern.

DEMONSTRATE the tying procedure for the fishfly pattern, explaining the procedure as you tie and leaving the fly in the vise for a pattern when finished.

PASS OUT the materials needed to complete the Strawman Nymph, explaining their uses and describing the pattern.

DEMONSTRATE the strawman nymph, leaving the finished fly in the vise as a model for the participants.

- b. Tying procedure
 - 1) Bind in short tail and trim butts
 - 2) Bind in ribbing material
 - 3) Spin deer hair to eye thinly

DO NOT PACK the deer hair, but leave it rather thinly and openly applied.

RIB the fly through the deer hair, leaving it more or less in rings.

EMPHASIZE finishing the tying before trimming the deer hair. **NOTE** that waiting until the head cement has set prevents getting clippings on the head.

NOTE that the C. K. Nymph uses materials that could become wastes on a fly tier's bench - soft parts of wood duck flank feathers and big, heavy grizzly neck hackles - to make a very productive nymph that suggests a wide variety of species.

- 3. C. K. nymph
 - a. Originated by Chuck Kraft
 - 1) Virginia fly tier
 - 2) Waste materials
 - 3) Suggestive of many nymphs
 - b. Pattern
 - 1) Hook: 3x long #8
 - 2) Thread: 6/0 black
 - 3) Underbody: lead wire, lacquered
 - 4) Tail: wood duck flank
 - 5) Rib: grizzly hackle
 - 6) Body: black wool
 - 7) Head: generous, tying thread
 - c. Tying procedure
 - 1) Wind lead wire on shank
 - a) Size to needs
 - b) Bind in place with thread
 - c) Lacquer thread and lead
 - 2) Bind in wood duck flank tail
 - a) Short and heavy
 - b) Webby, soft parts fine
 - 3) Bind in grizzly hackle by base
 - 4) Bind in and apply wool body
 - 5) Tie off body at head area
 - 6) Spiral hackle to head
 - 7) Bind hackle tip and trim
 - 8) Wind generous head
 - 9) Whip finish and lacquer head
 - 10) Trim hackle to about 1/3 inch

PASS OUT the materials for a C. K. Nymph while describing their use. **NOTE** that the original pattern called for a 3x long #8 hook, but that larger and smaller ones can be productive as well.

NOTE that the lead wire can be from very fine to heavy, depending on the conditions. **WIND** the lead very tightly, breaking off the ends and winding the lead underbody with thread to make tapered ends on the underbody. **EMPHASIZE** the need to lacquer the lead and thread to prevent corrosion and staining.

KEEP the tail short and heavy for best results.

NOTE that binding in the hackle at the base makes a stronger tie than does palmering the hackle, particularly on the end most damaged by fish teeth.

NOTE that wool, acrylic or other black yarns work equally well.

USE the hackle as a rib, with an extra turn at the head.

FORM a generous head, whip finish and lacquer before trimming all hackle fibers to a length of about 1/2 to 1/3 inch.

C. Dobsonflies – hellgrammites

- 1. Large predatory larvae
 - a. Similar to large stoneflies
 - b. Rubble bottoms
 - c. Riffle areas
 - d. Actively sought by fish
- 2. Black wooly bugger
 - a. Suggestive of hellgrammite
 - b. Pattern

DESCRIBE hellgrammites or dobsonfly larvae and the habitats in which they are normally found. **NOTE** that these predators tend to favor highly oxygenated waters. **DISCUSS** the fact that we will attempt two patterns that may pass for these highly sought natural insects.

NOTE that the black wooly bugger can be suggestive of many fish food organisms, including a swimming hellgrammite.

PASS OUT the materials needed to tie the pattern, while discussing their use.

- 1) Hook: 2x-3x long
 - 2) Thread: 6/0 black
 - 3) Tail: black marabou short
 - 4) Hackle: black as rib
 - 5) Body: black chenille
 - 6) Head: tying thread, lacquered
- c. Tying procedure
- 1) Bind thread on at rear of shank

 - 2) Bind in a shank-length marabou short as a tail
 - 3) Bind in black hackle over tail
 - 4) Bind in black chenille
 - 5) Carry thread to shoulder

 - 6) Wind chenille to shoulder
 - 7) Rib body with black hackle
 - 8) Wind head, whip finish, lacquer

EXPLAIN the tying procedure for the pattern while demonstrating it. **LEAVE** the finished fly in the vise to serve as a model for the participants.

SELECT a marabou short about shank length and **BIND** it in at the rear of the shank.

BIND IN a soft black hackle over the tail as a rib, then **ADD** a piece of black chenille. If desired **BIND IN** a piece of either flat or oval silver tinsel as a rib.

WIND the chenille to the shoulder, binding it off and trimming the end. **WIND** the black hackle as a rib to the shoulder. **TRIM** the end, **WIND** a head, **WHIP FINISH** and **LACQUER** the head.

PASS OUT the materials needed to tie a hellgrammite while explaining their use in the pattern.

3. Hellgrammite

a. Pattern

- 1) Hook: 3x-4x long #8 - #4
- 2) Thread: 6/0 black or dark brown
- 3) Tail: brown marabou clipped short
- 4) Underbody: stiff plastic strip
- 5) Body: dark brown dubbing
- 6) Back: dark mottled turkey quill
- 7) Rib: fine oval gold tinsel
- 8) Gills: silvery gray floss, cross-whipped in place
- 9) Thorax: dark brown dubbing
- 10) Hackle: brown partridge
- 11) Collar: dark brown turkey quill
- 12) Head: large, quill over dubbing

NOTE that dark brown, olive or nearly black materials can be used in all parts of the pattern.

DEMONSTRATE the pattern, leaving the finished fly in the vise as a model.

SHAPE a double-tapered body and **BIND** it in with thread, fixing it in place with CA cement.

b. Tying procedure

- 1) Prepare and bind in shaped plastic strip underbody
- 2) Apply cement to underbody
- 3) Bind in and trim marabou tail

- 4) Bind in 4-6 pieces of floss for gills
- 5) Prepare and bind in quill slip for back
- 6) Bind in ribbing material
- 7) Apply dubbing to abdomen
- 8) Pull quill forward and bind down

- 9) Rib body with tinsel or wire

- 10) Bind back turkey quill slip
- 11) Bind in brown partridge hackle

BIND in a generous marabou tail and trim it to length.

BIND in strips of floss by cross-whipping them in place along the length of the abdomen, leaving them long to ease handling.

CUT a turkey quill strip, **COAT** it with vinyl cement, and **BIND** it in place.

BIND in thin oval tinsel or gold wire for ribbing material and **DUB** a raccoon fur abdomen.

PULL the turkey quill forward firmly and bind it in place ahead of the abdomen.

Carefully **RIB** the abdomen keeping the gills separate and distinct along the side.

WIND over the base of the turkey quill to fold it back.

BIND in a brown partridge hackle and **APPLY** a thorax more heavily dubbed than the abdomen.

WIND and **BIND** in the hackle, trimming it at the front of the thorax; and **BIND** the collar in place ahead of it.

- 12) Apply heavy dubbing to thorax
- 13) Wind and bind in hackle
- 14) Pull collar forward and bind in
- 15) Form fur ball for head
- 16) Pull back over dubbed head and bind in

FORM a generous head of dubbing fur, **PULL** the quill over it, and **BIND** it in place.

WHIP finish and lacquer the thread before trimming the floss to simulate gills.

- 17) Wind head, whip finish, lacquer
- 18) Trim floss to simulate gills

DESCRIBE a typical stonefly nymph and its habitat. **NOTE** that some species may burrow to great depths in aquifers, spending much of their life beneath the surface; but that they must have well oxygenated water. **POINT OUT** the two pairs of wing pads and **DISCUSS** some of the variability in the group.

III. Stoneflies

A. Description and habitat

1. Predatory and herbivorous larvae
 - a. Long tails
 - b. Elongate abdomen
 - c. Thorax with axillary gills
 - d. Two sets of wing pads
 - e. Large head
 - f. Colors and sizes variable

2. Habitat

- a. Rock or gravel bottoms
 - 1) Clambering in rubble
 - 2) May burrow deep in gravel
- b. Well oxygenated water
 - 1) Riffles and rapids
 - 2) Cold water streams

NOTE that tiers have produced many patterns to suggest or imitate stoneflies, using many types of materials. Only a few are included here.

PASS OUT the materials needed to tie a little yellow stonefly nymph while explaining the use of each one.

B. Fur-bodied patterns

1. Little yellow stone

a. Pattern

- 1) Hook: 3x long #14-18
- 2) Thread: 6/0 amber or pale orange
- 3) Tails: yellow fibers from leading edge of flight feather
- 4) Rib: brown buttonhole thread
- 5) Body: sulfur seal or dyed fur
- 6) Thorax: roughly dubbed body material
- 7) Wing case: mottled turkey quill slip, lacquered
- 8) Hackle: dyed yellow partridge
- 9) Head: folded wing case material with brown yarn or monofilament eyes

DEMONSTRATE the pattern, explaining each step in the tying process and leaving the finished fly in the vise as a model.

START by dubbing a small ball of sulfur fur at the rear of the shank. **BIND** in the tails ahead of the ball, causing them to flare to the sides slightly.

b. Tying procedure

- 1) Small ball of dubbing at tail
- 2) Bind in tail fibers
- 3) Bind in ribbing material
- 4) Apply abdomen dubbing
- 5) Apply ribbing material, bind off

BIND in a piece of brown buttonhole thread for ribbing material before applying a dubbed abdomen of sulfur yellow fur. **WIND** the ribbing material forward to the thorax area and bind it off with several turns of thread.

CLIP a slip of well-marked mottled turkey quill from the feather and **BIND** it in as a wing pad. [You may wish to coat the slip with a vinyl cement or spray fixative before attaching it.]

- 6) Bind in turkey slip

BIND in a dyed partridge hackle with the outer edge up before applying a dubbed thorax of yellow fur. **NOTE** that the thorax

- 7) Bind in partridge hackle
 - 8) Apply thorax dubbing

 - 9) Fold wing case and bind in
 - 10) Repeat with second wing case
 - 11) Bind excess wing case forward

 - 12) Bind in eye material
 - 13) Fold wing back over eyes
 - 14) Bind in with narrow band of thread and whip finish
 - 15) Lacquer eyes and windings
2. Early dark stone
- a. Pattern
 - 1) Hook: 2x long, #16
 - 2) Thread: 6/0 black
 - 3) Tail: black goose or turkey
 - 4) Abdomen: sooty dubbing
 - 5) Ribbing: stripped peacock
 - 6) Wing case: goose wing slip
 - 7) Thorax: sooty dubbing
 - 8) Hackle: soft black hen
 - 9) Head: tying thread, lacquered
 - b. Tying procedure
 - 1) Dub small ball at rear of shank
 - 2) Attach tails flared at dubbing ball
 - 3) Bind in ribbing material
 - 4) Dub abdomen
 - 5) Apply ribbing
 - 6) Bind in treated goose slip
 - 7) Bind in hackle feather
 - 8) Apply dubbed thorax

 - 9) Wind hackle and bind off
 - 10) Set wing cases
 - a) Form over dubbing needle
 - b) Crease behind thorax
 - c) Bind down at throat
 - d) Crease remaining quill slip about 1/2 way back thorax
 - e) Bind down at back of head
 - 11) Wind head, whip finish, lacquer
3. Bird's stonefly #1
- a. Pattern
 - 1) Hook: 3x - 4x long
 - 2) Thread: primrose or yellow 6/0
 - 3) Tail: gray turkey wing fibers
 - 4) Body: dark muskrat dubbing
 - 5) Rib: yellow silk floss
 - 6) Wing case: clear plastic strip

should be left somewhat rough.

PLACE a dubbing needle behind the thorax and **BEND** the wing case material forward, binding it down at the front of the thorax. **REPEAT** this process, forming a second wing case about half-way back on the thorax and binding the excess forward.

BIND in either small monofilament eyes or a piece of black yarn. **DUB** a small head, and **FOLD** the turkey quill back over the head and tie it in with a narrow band of thread.

WHIP finish the tie down area and **LACQUER** the eyes and windings.

REVIEW the pattern for the early dark stone, passing out the materials as the pattern is covered.

START the tie in a similar fashion to the previous pattern using a small ball of dubbing to **FLARE** the tails slightly.

BIND in a stripped peacock herl as a rib before dubbing a dark gray abdomen. **RIB** the abdomen closely, leaving small bands of fur between the ribs.

BIND in a slip of vinyl treated dark goose quill, followed by a soft black hen hackle.

DUB the thorax slightly heavier than the abdomen, leaving it a bit rough.

WIND the hackles sparsely and bind them off behind the head.

SET the wing cases as with the previous pattern, forming two obvious layers. [Alternatively, bind in two cut slips of wing pad material, leaving the shaped ends over the thorax.]

WHIP finish the head and apply a drop or two of lacquer.

DESCRIBE the materials used in tying this pattern while passing them out to the participants.

- 7) Thorax: peacock herl
- 8) Hackle: gray hen at sides only
- 9) Head: yellow tying thread

b. Tying procedure

- 1) Form small dubbing ball at tail
- 2) Bind in turkey fibers, divided
- 3) Bind in yellow silk floss
- 4) Dub rough muskrat abdomen
- 5) Apply ribbing to thorax
- 6) Bind in clear plastic strip
- 7) Bind in gray hen hackle
- 8) Bind in peacock herl
- 9) Carry thread forward to throat
- 10) Wind peacock herl thorax
- 11) Wind hackle and bind off
- 12) Trim top hackle fibers
- 13) Pull plastic forward and bind off
- 14) Wind head, whip finish, lacquer

c. Variation – Bird's stonefly #2

- 1) Hook: 3x -4x long
- 2) Thread: orange 6/0
- 3) Tail: dark brown turkey quill
- 4) Abdomen: dark brown fox fur
- 5) Rib: orange silk floss
- 6) Wing case: clear plastic strip
- 7) Thorax: peacock herl
- 8) Hackle: soft brown hen at sides only
- 9) Head: orange tying thread

C. Montana nymph

1. Pattern

- a. Hook: 3x - 4x long
- b. Thread: 6/0 black
- c. Tail: soft black hackle fibers
- d. Abdomen: black chenille
- e. Wing case: black chenille
- f. Thorax: yellow chenille
- g. Hackle: long soft black hen
- h. Head: large of tying thread

2. Tying procedure

- a. Bind in tail fibers at rear of shank
- b. Bind in black chenille
- c. Carry thread forward to thorax area
- d. Wind abdomen and bind off
- e. Bind in two strands of chenille for wing case
- f. Bind in yellow chenille
- g. Bind in hackle
- h. Wind yellow chenille to shoulder
- I. Wind black hackles to shoulder
- j. Bind and trim hackle
- k. Pull wing case chenille forward and bind down
- l. Trim wing case material
- m. Wind head, whip finish, lacquer

D. Hardback nymph

BIND in the tail in the pattern established above, followed by the yellow silk [nylon or acetate can be used] floss ribbing.

DUB a rough abdomen with muskrat fur, and **APPLY** the ribbing to the thorax, binding it down.

BIND in a clear strip of plastic and a gray (dun) hen hackle, followed by several strands of peacock herl.

WIND the peacock herl to the throat area, creating a generous thorax, and **BIND** it off. **APPLY** the hackle and bind it off at the throat as well. **TRIM** the top hackle fibers close to the herl.

PULL the plastic forward over the thorax and bind it off before winding a head, and finishing in the usual manner.

REVIEW Bird's stonefly #2 and the differences between the two patterns. **ALLOW** the participants to tie one if time and interest permit.

PASS OUT the materials to tie a Montana nymph while discussing the pattern.

DEMONSTRATE the pattern, leaving the model in the vise for comparison purposes.

WIND the abdomen covering about 2/3 of the shank and doubling the chenille to serve as a wing case.

After applying the thorax and hackles, **PULL** the wing case materials forward and **BIND** them firmly in place before trimming and finishing conventionally.

NOTE that hardback nymphs can be tied to resemble a wide variety of insect larvae. This one is designed to mimic a black backed, yellow bellied stonefly. **PASS OUT** the materials while discussing their use in the pattern. [**Leader's Note:** For

1. Pattern
 - a. Hook: #12 - 18 regular to 2x long
 - b. Thread: black 6/0
 - c. Tail: soft black hackle fibers
 - d. Body: yellow dubbing
 - 1) Saturate with lacquer
 - 2) Squeeze flat with pliers
 - 3) Lacquer black on back
 - e. Hackle: soft black at sides only
 - f. Head: tying thread, lacquered
 2. Tying procedure
 - a. Bind in hackle fiber tail
 - b. Dub double tapered body to throat
 - c. Saturate body with clear lacquer
 - d. Squeeze body flat with pliers
 - e. Apply black hackle
 - f. Trim hackle top and bottom
 - g. Wind head, whip finish, lacquer
 - h. Paint upper body black with lacquer
- E. Woven stonefly nymphs
1. Ability to form a two-tone body
 - a. Many materials useful
 - 1) Yarn or dubbed fur
 - 2) Floss
 - 3) Plastic tubing or latex
 - a) Bug skin or dental dam
 - b) Swannundaze
 - c) Larva lace
 - b. Combinations to meet needs
 2. Weaving techniques
 - a. Looped method
 - 1) Bring belly strand under hook
 - 2) Bring back strand over hook
 - 3) Loop belly over back
 - 4) Repeat to cover body
 - 5) Keep looping direction the same
 - 6) Bind off at thorax
 - b. Knotted method
 - 1) Tie materials in overhand knot
 - 2) Slide knot over hook, back up
 - 3) Repeat to fill abdomen area
 - 4) Bind off at thorax
 3. Mottled orange-brown stonefly nymph
 - a. Pattern
 - 1) Hook: 2x or 3x long nymph
 - 2) Thread: orange 6/0
 - 3) Tail: yellow turkey quill fibers
 - 4) Back: dull orange yarn or fur
(spot with permanent marker)
 - 5) Belly: yellow yarn or dubbing
 - 6) Wing case: dyed mottled turkey
 - 7) Thorax: yellow dubbing
 - 8) Hackle: partridge dyed yellow
 - 9) Head: tying thread, lacquered
 - b. Tying procedures

demonstration purposes and rapid completion of the pattern, having sufficient bodies formed and dried may be advised.]

DEMONSTRATE the process of forming the body by saturating it with lacquer (or a thin, quick acting epoxy) and squeezing the body flat (dorso-ventrally) with flat-jawed pliers. Remember to clean the pliers thoroughly.

Have participants **COMPLETE** a hardback on a body that is already formed and cured.

NOTE that woven stonefly nymphs can be formed using a wide variety of materials from plastics to dubbing strands, dental dam latex, floss or other materials of your choice. **DISCUSS** the flattened body shape and the ability to produce a two-tone body as advantages to the technique.

USE materials of choice to **DEMONSTRATE** and permit participants to **PRACTICE** the weaving techniques outlined here.

PASS OUT the materials for this pattern while explaining their use.

NOTE that a plastic form or lead wire pontoons can be used to widen the body.

DEMONSTRATE the pattern, leaving the fly in the vise for a model. Start by **BINDING** in the body materials as described.

- 1) Bind in body materials
 - a) Belly color on near side
 - b) Back color on far side
- 2) Bind in tails
- 3) Wind back color one turn to divide tails
- 4) Weave back and belly to thorax
- 5) Bind in wing case
- 6) Bind in hackle
- 7) Dub a heavy thorax
- 8) Wind hackle to throat, bind in
- 9) Form two wing cases
- 10) Form head, whip finish, lacquer
- 11) Add brown markings on the back using a permanent marker

BIND in the tails in a split fashion using a turn of material from the back to separate the tails.

WEAVE the back and belly materials to the thorax, taking care to keep the color pattern the same throughout.

BIND in the prepared wing case materials and the hackle feather before **DUBBING** the thorax heavily.

WIND the hackle in open turns and bind it off at the head.

FORM a pair of overlapping wing cases, using one of the techniques used earlier and **FINISH** the fly as usual.

Be careful **NOT** to **OVERDO** it on the markings.

PASS OUT the materials for this pattern while discussing their use.

3. Larva lace stonefly nymph

a. Pattern

- 1) Hook: 2x -3x long nymph
- 2) Thread: 6/0 black
- 3) Tail: yellow goose fibers
- 4) Underbody: muskrat fur over a plastic form
- 5) Belly: yellow larva lace
- 6) Back: black larva lace
- 7) Wing case: mottled turkey slip
- 8) Thorax: amber seal fur
- 9) Hackle: yellow partridge hackle
- 10) Head: tying thread, lacquered

TIE a demonstration fly, leaving the finished fly in the vise as a model for the participants to study.

b. Tying procedure

- 1) Form small ball of dubbing
- 2) Bind in and divide tails
- 3) Attach body materials
 - a) One color on either side
 - b) Extra material along sides
- 4) Wind underbody to thorax
- 5) Wind one turn of body material behind tails and one over their bases
- 6) Weave body by method above
- 7) Bind off body materials
- 8) Bind in turkey quill slip
- 9) Bind in brown partridge hackle
 - a) Center on thorax
 - b) Underside up
- 10) Apply amber seal fur thorax
- 11) Bind off at head area
- 12) Pull hackle forward and bind off at front of thorax, trim
- 13) Form rear wing pad
 - a) Pull quill forward
 - b) Bind down at head
- 14) Form front wing pad
 - a) Fold quill back to cover half of first wing pad

USE the same techniques as in the previous pattern to attach the tails, split them and fashion the abdomen of the fly.

ATTACH the wing case and hackle materials before **DUBBING** the thorax.

PULL the hackle forward, **TRIM** it and **BIND** it in place.

FORM the wing pads by folding the quill and binding them in place.

- b) Crease over dubbing needle
- c) Bind down at head
- 15) Form head and eyes
 - a) Bind in small mono eyes OR small piece of black yarn tied perpendicular to hook
 - b) Pull quill over eyes
 - c) Bind down and trim quill
 - d) Trim and lacquer yarn
- 16) Wind, whip finish head, lacquer

CROSS whip a piece of yarn or **ATTACH** mono eyes before forming the head.

FORM the head, **TRIM** the yarn and **LACQUER** the yarn to give the eyes a shiny appearance.

FINISH in the usual manner.

DISCUSS the appearance and behavior of dragonfly and damselfly nymphs.

IV. Damselfly and dragonfly nymphs

A. Damselfly and dragonfly nymphs

1. Predatory
2. Large eyes and heads
3. Nymphal wings obvious
4. Body shapes variable with species

NOTE the characteristics of damselfly nymphs, including the terminal gills and the vertical swimming motion.

B. Damselfly nymphs

1. Slender and elongate
2. Nearly cylindrical in shape
3. Three terminal gills
4. Vertical swimming motion

NOTE the characteristics of dragonfly nymphs, including their ability to jet through the water for short distances.

C. Dragonfly nymphs

1. Robust bodies, variously elongate
2. Internal anal gills
3. Able to jet through water

D. Olive damselfly nymph

1. Pattern
 - a. Hook: 2-3x long nymph hook
 - b. Thread: 6/0 olive or black
 - c. Tail: 3 olive hackle points
 - d. Rib: fine gold wire
 - e. Abdomen: olive dubbing
 - f. Wings: 4 brown hackle points
 - g. Thorax: olive dubbing
 - h. Legs: olive partridge or teal
 - i. Eyes: olive mono eyes
 - j. Head: tight olive dubbing
2. Tying procedure
 - a. Bind in 3 olive hackle points, flared
 - b. Bind in fine gold wire ribbing
 - c. Apply olive dubbing body
 - d. Wind ribbing to thorax and bind off
 - e. Bind in 4 brown hackle tips, slightly flared or fanned
 - f. Trim butts of hackle tips
 - g. Dub slightly enlarged, short thorax
 - h. Bind in olive partridge hackle
 - i. Wind 1-2 turns of hackle
 - j. Pull hackles down and back, bind in
 - k. Apply mono or bead chain eyes
 - l. Dub olive fur around and between eyes as a head
 - m. Form small head, whip finish, and apply head cement

PASS OUT the materials to tie an olive damselfly nymph and **EXPLAIN** how each item is used in the pattern.

BIND in the hackle point tails, keeping them flared slightly. **ADD** the fine gold wire and **APPLY** olive dubbing for a body.

BIND in the hackle point wings wet fly style, keeping them slightly flared.

DUB a short but slightly humped thorax before binding in the olive partridge hackle for legs.

APPLY mono eyes or bead chain eyes and **DUB** around them with olive fur to form an enlarged head.

FORM a small head and finish in the standard fashion.

NOTE that wiggle nymphs do an excellent job of mimicking the swimming motion of a damselfly nymph. **PASS OUT** the materials needed to tie the pattern and **DISCUSS** the tying

E. Brown damsel wiggle nymph

1. Pattern
 - a. Hooks: wet fly and 1-2x long ringed eye
 - b. Thread: 6/0 brown or black
 - c. Tails: 3 dark ginger hackle tips
 - d. Rib: fine gold wire
 - e. Abdomen: mixed brown and tan fur
 - f. Connector: vertical loop of either stiff monofilament or fine stainless wire
 - g. Wings: 4 hackle tips (black or dark dun)
 - h. Thorax: mixed brown and tan fur
 - I. Hackle: brown partridge or grouse
 - j. Eyes: black mono or bead chain eyes
 - k. Head: brown/tan fur dubbing

process.

TIE a sample pattern, leaving it in the vise as a model.

USE one ringed eyehook as the tail section, tying the abdomen on that shank.

2. Tying procedure
 - a. Clamp ringed eye hook in vise
 - b. Bind in tails, slightly flared
 - c. Bind in ribbing wire
 - d. Dub cylindrical body of coarsely mixed tan and brown fur
 - e. Apply ribbing and bind off at eye
 - f. Whip finish thread and lacquer
 - g. Clamp wet fly hook in vise
 - h. Bind connector bottom to shank
 - I. Slide rear body's eye on connector
 - j. Bind connector top to shank
 - k. Lacquer bindings on connector

FINISH the fly at the eye, **WHIP** finish and **LACQUER** as usual.

CLAMP the second wet fly hook in the vise and **BIND** in one end of the connector. **SLIDE** the eye of the rear hook onto the connector and **BIND** in the other end of the loop, keeping it compact but leaving enough material to allow free movement of the "abdomen." **LACQUER** the windings to secure them.

DUB the rear half of the shank as the front of the abdomen, **APPLY** the wings, and **DUB** the thorax, and **APPLY** the hackles.

- l. Dub rear half of shank as abdomen
- m. Apply wings, slightly fanned
- n. Dub slightly humped thorax
- o. Apply hackle
- p. Bind in eyes
- q. Dub head around and between eyes
- r. Whip finish thread and lacquer

BIND in the eyes, **DUB** the head around and between the eyes, and finish conventionally.

NOTE that this pattern can be tied in brown, black or olive to simulate various dragonfly nymphs. **PASS OUT** the materials needed to tie the fly and **DISCUSS** their use in this pattern.

F. Black dragonfly nymph

1. Pattern
 - a. Hook: x-2x long wet fly or nymph
 - b. Thread: 6/0 black
 - c. Underbody: shaped plastic or lead
 - d. Rib: stripped black duck quill
 - e. Abdomen: blackish gray fur
 - f. Wing pad: shaped goose marginal
 - g. Thorax: goose quill over black fur
 - h. Legs: knotted goose quill fur
2. Tying procedure fibers
 - I. Eyes: black mono or bead chain
- j. Head: goose quill over black
 - a. Bind in plastic or lead underbody
 - b. Bind in ribbing quill
 - c. Dub tapered abdomen
 - d. Wind rib closely to thorax area

DEMONSTRATE tying the pattern, leaving the fly in the vise as a model.

START by binding in the ribbing quill [demonstrate quill preparation if needed.] and **DUB** a tapered abdomen over the tapered plastic or lead body. **APPLY** the rib closely, nearly touching.

KNOT the quill section legs and **BIND** them on in pairs.

BIND in the black wing quill strip, leaving shaped wings over the front of the abdomen.

- e. Knot and bind in legs in pairs

- f. Bind in black wing quill strip leaving shaped wings over front of abdomen
 - g. Dub thorax
 - h. Bind in eyes right behind hook eye
 - I. Dub between and around eyes, leaving thread right behind them
 - j. Pull quill strip forward and bind down behind eyes
 - k. Carry thread to hook eye
 - l. Bind down quill over eye area
 - m. Trim excess quill
 - n. Whip finish and lacquer
3. Variations
- a. Length and width variations
 - 1) Elongate, narrow nymphs
 - 2) Short, stout nymphs
 - b. Color variations
 - 1) Black, dark gray
 - 2) Dark brown
 - 3) Light brown/olive
 - 4) Dark olive
- DUB** the thorax, positioning the legs in the process.
BIND IN the eyes using a cross-whipped approach to keep them in place and **DUB** the head around and between the eyes to form a generous head.
- PULL** a piece of the quill strip forward and **BIND** it down over the eye area, trimming away the excess.
- FINISH** the fly conventionally, lacquering the abdomen as well as the wing cases and head.
- DISCUSS** variations on the same theme to produce other patterns.
- These flies should be fished in a fashion that mimics the behavior of the natural flies, rising and falling, in short spurts, or slowly undulating. Experiment to determine the best approach.

V. Fishing them

- A. Dead drift
- 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 includes techniques used to tie stonefly, alderfly, fishfly, dobsonfly, dragonfly and damselfly nymphs. We will be using clipped hackles, deer hair with ribbing materials, wiggle nymphs, quill bodied nymphs, nymphs with lacquered backs, folded wing cases, and eyes made of burned monofilament or lacquered yarn. All of these techniques are transferable to other patterns, but they are used here to teach specific patterns that work for the angler.

Fishflies, Alderflies and Dobsonflies

These nymphs are robust, predatory insect larvae with stout abdominal gills. They are usually located in well-oxygenated water with stone or rubble bottoms, often in riffle areas or rapids. Even where they are abundant, they are seldom seen unless they are sought purposefully, and they appear to be heavily depredated by fish.

Tying a Fishfly Larva

The fishfly pattern selected is a simple one using entirely black materials, yet it is effective in many waters.

- Hook: 2x long nymph hooks
- Thread: 6/0 black
- Body: black dubbing or yarn

Hackle: palmered black, clipped
Head: tying thread, lacquered

Start the pattern by binding in a soft black hackle at the end of the shank. Binding it in at the tip produces a more realistic pattern, but tying by the base makes the rear of the fly stronger and more resistant to the teeth of fish. Next bind in a piece of black yarn, like wool or antron. Black angora makes an outstanding pattern as well, and one could substitute chenille if desired. Carry the thread to the head area, and wind the body materials to the head, tying it off there with several wraps of thread. Palmer the hackle to the head in neatly spaced turns, binding it off at the head. Trim away the excess hackle. Wind a smoothly tapered head, whip finish the thread and apply a drop or two of head cement to seal the thread. Using your scissors held flat to the pattern, trim the hackles about two-thirds of the gap width all around.

Tying the Strawman Nymph

The Strawman Nymph is a relatively old pattern that effectively suggests lighter bodied members of this group of insect larvae. The pattern follows.

Hook: 2x long nymph
Thread: 6/0 black
Tail: mallard flank
Body: clipped deer body hair
Rib: amber or yellow floss
Hackle: partridge (optional)
Head: tying thread, lacquered

Start tying the Strawman Nymph by binding a strip of yellow floss at the rear of the shank as ribbing material. Spin deer hair thinly to fill the shank. Apply the ribbing material, winding it to the head area of the fly. Bind off the ribbing and trim away the excess material. Wind a nicely proportioned head, whip finish the tying thread, and apply head cement to seal the head. Once the lacquer is dry, trim the deer hair so it is about 1/2 the gap width of the hook, tapering it so it is longer at the head than at the tail of the shank.

Tying the C. K. Nymph

This nymph was originated by Virginia fly tier, Chuck Kraft. When I first saw the pattern, I was convinced that he developed it as a means of using some of the waste from expensive materials like grizzly hackle capes and wood duck flank feathers. It uses the long grizzly hackles that are too big and often too soft to be used as dry fly material, clipping them to make them the appropriate length. The tails are best made from the bases of wood duck flank feathers, too soft and webby to make good dry fly wings but just right for this application. The pattern has a very buggy appearance, and it is suggestive of many nymphs. For many years I believed it to be a good imitation of a stick-cased caddisfly, but it proved deadly on trout and bass, even where those animals were not present. It is a pretty good representation of a member of this group with the hackle tips suggesting the gills and legs of the larvae. Regardless of its origin or its intent, this is an outstanding pattern all over the country for a wide variety of fish. My own fishing with it has been mainly for trout and both smallmouth and largemouth bass with a few Atlantic salmon thrown in for good measure. The pattern follows.

Hook: 3x long #8
Thread: 6/0 black
Underbody: lead wire, lacquered
Tail: wood duck flank
Rib: grizzly hackle
Body: black wool
Head: generous, tying thread

Start tying the C. K. Nymph by winding lead wire to cover the entire shank. Vary the diameter of the lead wire to the conditions. Wind tapered thread ends to the lead wire and bind the wire down with many crisscrossed layers of thread. Lacquer the thread and the lead wire well to prevent forming oxides that can

discolor the patter. Bind in a short, heavy tail using the softer parts of wood duck flank feathers. Bind in a large grizzly hackle feather. Binding it in at the base provides a stronger and more durable fly, but tying it in at the tip is also acceptable. Bind in a piece of black wool yarn as body material. Carry the tying thread to the base of the head, and wind the wool over it to form the body. Bind it down and trim away the excess material. Spiral the grizzly hackle forward over the wool body as a rib. Take an extra turn at the head, and bind the hackle down. Trim the excess hackle away, then wind a generous head. Whip finish the thread and apply a drop or two of head cement to finish the fly. The pattern may be tied with larger or smaller hooks, but the original was tied on a #8, and it remains very effective.

Dobsonflies - Dobsonfly larvae are often called hellgrammites or “dobsons” by anglers. They are frequently quite large, and they are voracious predators on other aquatic organisms. They have large heads equipped with heavy jaws that can inflict a painful pinch. Behind the head is a collar. The abdomen has robust gills along the flanks. Their habitat is similar to that of rubble-dwelling stoneflies, usually in riffles or rapids where water is highly oxygenated. They clamor about the bottom and through openings in the bottom structure searching for prey and hiding from predators. When dislodged from their hold on the bottom by currents or other actions, they lash about vigorously, but they are relatively ineffective as swimmers. These large larvae are very actively sought by fish, and they may be very effective as baits. Flies used to imitate them should be fished slowly along the bottom or actively in the water column. Several patterns can be used to suggest hellgrammites, including the black wooly bugger.

Tying a Black Wooly Buzzer

Most anglers would consider the wooly buzzers to be excellent searching patterns that suggest but do not imitate any specific insect, annelid or fish. Others would content that they imitate “stonecats” or madtoms, leeches or perhaps hellgrammites. Regardless of their imitative value, the black wooly bugger will do an excellent job of attracting hits from fish where hellgrammites are found. The pattern follows.

Hook: 2x-3x long
Thread: 6/0 black
Tail: black marabou short
Hackle: black as rib
Body: black chenille
Head: tying thread, lacquered

Start tying the pattern by attaching the thread near the bend of the hook. Bind in a shank length marabou short as a tail. Trim the butts if necessary, and bind in a soft black hackle over the tail. Bind in a piece of black chenille over the tie down area, and carry the thread forward to the shoulder area. If desired, the fly may be weighted with a few turns of lead wire, binding it in place a lacquering over it if this option is used. Wind the black chenille to shoulder, binding it off and trimming it carefully at the head. Wind the hackle over the body as a rib in tight, but open turns. Bind the hackle off at the head and trim the excess hackle away. Wind a modest head, apply a whip finish, and lacquer the head to finish the fly.

Tying a Hellgrammite

This pattern is originated as an imitative hellgrammite.

Hook: 3x-4x long #8 - #4
Thread: 6/0 black or dark brown
Tail: brown marabou clipped short
Underbody: stiff plastic strip
Body: dark brown dubbing
Back: dark mottled turkey quill
Rib: fine oval tinsel
Gills: silvery gray floss, cross-whipped in place
Thorax: dark brown dubbing
Hackle: brown partridge
Collar: dark brown turkey quill
Head: large, quill over dubbing

The tying process starts with preparation and application of a tapered plastic strip as an underbody. The underbody is bound in place with thread and anchored with a cyanoacrylate glue. Once the underbody is in place, a short, stout tail of brown marabou is bound in and clipped. Next, several pieces of silvery gray floss are bound in place, spaced out along the abdomen. A slip of dark, mottled turkey quill is clipped from the feather and treated with a few drops of vinyl cement or artist's spray fixative. Once prepared and dry, the strip is bound in at the tail with the underside up. Fine oval silver tinsel is bound in for ribbing, and the body is dubbed to the thorax being careful to avoid tying down the gills. The back is pulled forward over the abdomen and bound in at the collar, then ribbed with the tinsel, again avoiding binding down the gills. Next, the turkey quill is held back toward the tail and bound in place. A brown partridge hackle is bound in place before dubbing a heavy ring of dark brown raccoon dubbing. The hackle is wound to the back of the head and trimmed at the top to suggest legs. The turkey quill is pulled forward over the collar and bound in before being tied back as before. A ball of fur is dubbed on the hook as the foundation for the head, and the quill is pulled forward to cover it as well. Binding off the turkey quill at the eye, it is trimmed closely before whip finishing the head and completing the fly as usual. The floss strips are trimmed to form stout gills after the fly is completed.

Stoneflies

Stoneflies are a diverse group of insects including both predatory and herbivorous larvae with long tails, an elongated abdomen, axillary gills (gills at the bases of the legs), two sets of wing pads and large heads. The sizes and colors are variable, with some species being drab and others with brilliant colors. Their habitat also is varied, but they require well-oxygenated water. Some burrow deep into the gravel of rivers or their aquifers. Others clamber among the rubble of riffles and rapids. They are more diverse and abundant in cold-water streams. Stonefly nymphs are tied using several methods, including fur-bodied, quill-bodied, chenille-bodied, and woven-bodied nymphs using a variety of materials. Both suggestive patterns and some that need to be isolated from other flies to keep them from eating them are effective fish catchers.

Tying a Little Yellow Stone

This pattern can be effective for a wide variety of yellow to amber stonefly nymphs, and it can be marked with a permanent marker to create a mottled effect as well. It is an example of a fur-bodied stonefly nymph and embodies the techniques used in tying that class of patterns.

Hook: 3x long #14-18
Thread: 6/0 amber or pale orange
Tails: yellow goose or turkey biots
Rib: brown buttonhole thread
Body: sulfur seal or similar dyed fur
Thorax: roughly dubbed body material
Wing case: mottled turkey quill slip, lacquered
Hackle: dyed yellow partridge
Head: folded wing case material with brown yarn or monofilament eyes

To tie this pattern start by attaching the thread at the rear of the shank and dubbing a small ball of fur. Strip a pair of yellow biots (fibers from the leading edge of a flight feather from a goose, duck or turkey) from the quill, and bind them in place in front of the dubbing ball, splitting the tails and leaving them rather long. Bind in a piece of brown buttonhole twist thread as a rib, and dub a tightly wound body of sulfur yellow seal fur or a similar fur to the thorax area. Bind the dubbing off and wind the ribbing material evenly to the thorax before binding it off and trimming it closely. Prepare a slip of mottled turkey quill (dyed yellow or natural), coat it with vinyl cement or spray fixative and bind it in place with the underside up and the tips to the rear of the hook. Bind in a prepared partridge hackle and dub a rough thorax of the same material used for the abdomen. Wind the hackle over the thorax tightly, binding it off and trimming the excess. Using a dubbing needle, fold the wing case material forward at about the midpoint of the shank and bind it down at the head area. Form the second wing case like the first, but fold it about half way down the first wing case, binding down the end near the eye of the hook. Bind in a pair of black monofilament eyes or a piece of black yarn, cross whipping it in place behind the eye; and dub a small amount of fur over the head area. Fold the excess wing material back over the head and bind it down with a ring of tying thread. Whip finish

the thread at the collar, then trim the eyes nearly flush with the head before lacquering the eyes, head, and collar.

Tying an Early Dark Stone

One of the earliest flies to hatch in many areas is a small dark stonefly. While there is seldom a significant amount of surface feeding on these species, the nymphs are often taken as the rise toward the surface.

Hook: 2x long, #16
Thread: 6/0 black
Tail: black goose or turkey
Abdomen: sooty dubbing
Ribbing: stripped peacock
Wing case: goose wing slip
Thorax: sooty dubbing
Hackle: soft black hen
Head: tying thread, lacquered

As in the previous pattern start by dubbing a tiny ball of fur at the rear of the shank and attaching a pair of flared tails in front of the fur ball. Prepare a peacock eye herl and bind it in by its tip for ribbing material. Using a dark mole or similar sooty gray dubbing, form a tightly wound, tapered body to the thorax. Apply the peacock quill ribbing closely, leaving only a small amount of the dubbing showing between turns. Bind the rib off at the shoulder and trim the excess. Notch a treated goose wing quill slip and bind it in over the front half of the body to form the rear wing case. Bind in a hen hackle and dub a rough thorax to right behind the eye. Wind the hackle forward to the head area, and bind it in place. Trim the fibers from the top of the thorax, leaving them at the sides and bottom only. Apply a second notched strip of goose quill, allowing it to extend over the thorax and the base of the rear wing. Note that the wings can also be formed as they were in the previous fly by folding the quill strip. Form a small head, whip finish the thread, and lacquer the head and abdomen.

Tying Bird's Stonefly #1

Bird's stoneflies are old patterns that have proven successful in suggesting or imitating large stonefly nymphs, like the salmon flies. The pattern for Bird's Stonefly #1 is listed below.

Hook: 3x - 4x long
Thread: primrose or yellow 6/0
Tail: gray turkey wing fibers
Body: dark muskrat dubbing
Rib: yellow silk floss
Wing case: clear plastic strip
Thorax: peacock herl
Hackle: gray hen at sides only
Head: yellow tying thread

Start by dubbing a small ball of muskrat fur at the rear of the shank and binding in a pair of turkey wing quill fibers, leaving them long and divided. Bind in the yellow floss ribbing and dub a generous and rough abdomen to the thorax. Apply the ribbing, bind it off and trim the excess material. Bind in a clear plastic strip as a wing case, leaving it hanging to the rear of the hook. Bind in a gray hen hackle for legs and several pieces of peacock herl. Carry the thread forward to the throat, and wind a heavy peacock herl thorax. Wind the hackle to the throat in open turns, binding off the tip and trimming the excess. Trim the hackle fibers off the top of the shank, leaving them on the sides and underside only. Pull the plastic strip forward, bind it off and trim in carefully. Wind a well-proportioned head, whip finish and lacquer.

Bird's Stonefly #2 is tied in the same fashion. The pattern follows.

Hook: 3x -4x long
Thread: orange 6/0

Tail: dark brown turkey quill
Abdomen: dark brown fox fur
Rib: orange silk floss
Wing case: clear plastic strip
Thorax: peacock herl
Hackle: soft brown hen at sides only
Head: orange tying thread

Tying the Montana Nymph

The Montana nymph is an example of a chenille bodied stonefly nymph. The pattern is listed below.

Hook: 3x - 4x long
Thread: 6/0 black
Tail: soft black hackle fibers
Abdomen: black chenille
Wing case: black chenille
Thorax: yellow chenille
Hackle: long soft black hen
Head: large of tying thread

The tying process for this pattern begins with attaching a clump of long, soft, black hackle fibers as a tail. Next bind in a piece of medium black chenille and carry the thread forward to the thorax area. Wind the chenille to the thorax, forming a smooth, cylindrical body. Double the remaining black chenille (or bind in two pieces of black chenille) and bind it back to be used as a wing case. Bind in a long, soft black hackle and a piece of yellow chenille and carry the thread forward to the throat. Wind the yellow chenille forward to the throat, forming a thorax. Bind it off and trim the excess material away. Wind the hackle in open turns to the shoulder, binding it off and trimming the excess material closely. Pull the two pieces of black chenille forward as a wing case and bind them down at the shoulder. Trim the wing case material and form a head, finishing the fly in the usual manner.

Tying a Hardback Nymph

Hardback nymphs can be used for a wide variety of species, but they are effective as stonefly patterns. They form a class of nymphs and may be tied in a wide variety of color variations. The pattern suggested here is a yellow and black hardback that suggests a similarly colored stonefly nymph.

Hook: #12 - 18 regular to 2x long
Thread: black 6/0
Tail: soft black hackle fibers
Body: yellow dubbing, saturated with lacquer and squeezed flat with pliers (black on back)
Hackle: soft black at sides only
Head: tying thread, lacquered

Most of the tying procedure for these patterns are conventional ones we have practiced in previous patterns. The tail is bound in at the rear of the shank using a small clump of soft black hackle. The body is dubbed so it tapers on both ends. The rear of the abdomen and the front of the thorax are about the same size, with the heaviest dubbing at the rear of the thorax. Once the body is dubbed, it is saturated with clear lacquer, vinyl cement or head cement and squeezed flat with a pair of smooth-jawed pliers. This will leave a dorso-ventrally flattened body somewhat wider than the dubbed body. Once the body has dried, paint the upper surface with black lacquer. Apply a couple turns of black hackle, binding it off, trimming the excess, and trimming the fibers top and bottom to leave only fibers on the sides. Form a head and finish in the conventional manner.

Tying Woven Stonefly Nymphs

Several types of woven nymphs have been developed to suggest the flattened, two-tone bodies common to stonefly nymphs. A variety of materials can be used, including dubbed fur, yarn, floss, plastic tubing,

plastic lace material, bug skin or dental dam - all in combinations to fit the needs. Two basic weaving methods are used. Both methods start with the materials bound on either side of the shank.

In the looped method, the belly strand is brought under the hook to meet the back strand. The belly strand is looped over the back strand, from the rear to the front of the fly, continuing the process to the thorax and binding both pieces off there before going on to the remainder of the tie. In the knotted method, the materials are tied together with a simple overhand knot. The knot is slid back over the hook with the location of the knot alternating from one side to the other until the abdomen is filled. Each knot is pulled tight as it is made, and errors are corrected simply by untying the knot and repositioning it to get the materials as desired. As with the looped method, the materials are tied off at the thorax before the materials are clipped.

Tying a Mottled Orange-brown Stonefly Nymph

This pattern is tied with either yarn or dubbed fur strands, and it features mottling applied with a fine-tipped, permanent marker.

Hook: 2x or 3x long nymph
Thread: orange 6/0
Tail: yellow turkey quill fibers
Back: dull orange yarn or dubbed fur
Belly: yellow yarn or dubbing
Wing case: dyed yellow mottled turkey
Thorax: yellow dubbing
Hackle: partridge dyed yellow
Head: tying thread, lacquered

Start the pattern by dubbing a small amount of the back material in a ball at the rear of the shank. Bind in the tails leaving them long and divided. (On larger ties, the addition of a plastic underbody to present a wide, flattened appearance is suggested.) Bind in the body materials with the belly materials along the near side and the back materials on the far side of the shank. Weave the back and belly strands forward to the thorax, binding them off with thread. Bind in a prepared strip of dyed yellow or amber mottled turkey quill for a wing case and a yellow dyed partridge hackle for legs. Dub a heavy thorax of yellow fur, and wind the hackle forward, binding it off at the shoulder. Fold the quill strip over a dubbing needle about a quarter of the way back on the abdomen. Bind it down at the shoulder and repeat the process about half-way back on the abdomen. Trim the excess material and form a modest head, finishing the pattern in the conventional manner.

Tying a Larva Lace Stonefly Nymph: a Yellow and Black Stone

This pattern introduces the fine tubing sold as ALarva Lace® and is adaptable to either the looped or knotted methods of forming a woven body. For larger flies, a tapered plastic under body should be glued to the shank and secured with cross wraps of thread before starting the pattern itself. Alternatively, Apontoons® of lead (or other) wire can be bound to the sides of the shank to give it a wide, thin appearance.

Hook: 2x -3x long nymph
Thread: 6/0 black
Tail: yellow goose fibers
Underbody: muskrat fur over a plastic form or excess body materials
Belly: yellow larva lace
Back: black larva lace
Wing case: mottled turkey slip
Thorax: amber seal fur
Hackle: dyed yellow or brown partridge
Head: tying thread, lacquered

If desired, attach a tapered plastic strip as an underbody using cross wraps of tying thread and a CA adhesive. Alternatively, bind in the ends of the body materials along the sides as pontoons to widen the

base for the body. As in the previous pattern, form a small ball of dubbing at the rear of the shank and attach the tails so they are long and split. Attach the body materials along the sides, one color on each side. Wind a single turn of the back material behind the tails, then one turn in front of them to set them in place. Using either weaving technique, weave the body to the thorax. Bind off the body materials securely and attach a dyed turkey wing quill slip as a wing case. Bind in a brown or dyed yellow partridge hackle centered on the thorax with the tip to the rear and the underside up. Dub an amber seal fur (or similar material) thorax, binding it off at the shoulder. Pull the hackle forward and bind it securely in place with the fibers extending equally to the sides. Form the rear and front wing pads as above. Bind in small mono eyes or a small piece of black yarn tied perpendicular to the shank. Pull the quill forward over the eyes, bind it down and trim it flush with the eyes. Wind a head, whip finish and lacquer the thread. Trim the yarn just slightly wider than the quill and apply a drop or two of lacquer to each side to simulate compound eyes.

Damselfly and Dragonfly Nymphs

Damselfly and dragonfly nymphs are predatory larvae with relatively large heads and eyes. Their nymphal wings are obvious and the body shapes are variable with the species. Damselfly nymphs are generally long and slender in appearance with bodies that are nearly cylindrical in cross section. They have three terminal gills that are quite obvious, and they swim with a vertical lashing motion. Dragonfly nymphs are generally much more robust, although they may be relatively long and slender or short and stout. They have internal anal gills, and they are able to jet through the water quite quickly using a stream of water forcibly ejected from the anus. Both dragonfly and damselfly nymphs can be seen in a variety of tan, olive, brown and nearly black colorations.

Tying the Olive Damselfly Nymph

The olive damselfly nymph is tied in the conventional manner on a single, long-shanked hook. It is an excellent pattern for still waters where damselflies are common, and may be excellent for nearly all species of fish in those habitats. The pattern follows.

Hook: 2-3x long nymph hook
Thread: 6/0 olive or black
Tail: 3 olive hackle points
Rib: fine gold wire
Abdomen: olive dubbing
Wings: 4 brown hackle points
Thorax: olive dubbing
Legs: olive partridge or teal
Eyes: olive mono eyes
Head: tight olive dubbing

Tying starts with the application of three olive hackle points at the rear of the hook, flared to simulate the gills of the natural insect. Bind in a piece of fine gold wire as ribbing material and dub a slightly tapered body nearly to the shoulder. Wind the ribbing to the thorax area and bind it off. Bind in four brown hackle tips vertically at the rear of the thorax with the tips slightly flared or fanned horizontally. Trim the butts of the hackle tips away and dub a slightly enlarged, short thorax. Bind in an olive partridge hackle or a soft olive hen hackle at the front of the thorax, pulling the hackles down and back and binding them in place. Apply a pair of mono eyes or bead chain eyes in front of the thorax. Apply a drop of CA cement to lock them in place, and wind over and between them with olive dubbing to form an enlarged head. Form a small thread head, whip finish and apply head cement to finish the fly.

Tying a Brown Damsel Wiggle Nymph

Wiggle nymphs impart a swimming motion to the fly and may be very effective in some situations. Two methods are commonly used for these patterns. One uses a piece of fine wire for the tailpiece and a short shank hook for the front piece. The second one, elected here, uses a pair of hooks: a ringed eyehook for the tail and a standard wet fly hook for the head. The connection between the two hooks is made using a short piece of fine stainless steel wire or heavy monofilament, permitting the tailpiece to move freely. This

pattern can be used for a wide variety of damselfly and larger mayfly nymphs by modifying some of the pattern elements. The pattern for a brown damselfly nymph is listed here.

Hooks: wet fly and 1-2x long ringed eye
Thread: brown or black
Tails: 3 dark ginger hackle tips
Rib: fine gold wire
Abdomen: mixed brown and tan fur
Connector: vertical loop of either stiff monofilament or fine stainless wire
Wings: 4 hackle tips (black or dark dun)
Thorax: mixed brown and tan fur
Eyes: black mono or bead chain eyes
Head: brown/tan fur dubbing

To start the pattern, clamp the ringed eyehook in the vise and bind in the three brown hackle points so they flare out representing the gills of the nymph. Bind in the ribbing wire and dub a slightly tapered body of coarsely mixed tan and brown fur. Leave the dubbing somewhat rough to lend an illusion of translucency. Apply the ribbing material and bind it off at the eye before whip finishing the rear portion of the tie. Clamp the wet fly hook in the vise and wrap the shank with thread. Lay a piece of stiff monofilament on the shank and bind it down, bending the forward tag and wrapping over it to secure the material in place. Slide the rear hook onto the monofilament until its eye is almost touching the shank of the front hook. Bend the monofilament into a tightly compact loop and bind it down. Bend the tag backward and wind over it to secure it in place. Lacquer or cement the bindings and the connector to secure it in place. If desired, wind a few turns of lead wire on the shank of the forward hook, bind it down and lacquer it. Dub the rear half of the shank as the abdomen, ribbing it with fine gold wire or oval tinsel. At about the midway point, bind in four dark dun or black hackle tips as the nymphal wings. Dub slightly humped thorax before binding in the eyes and winding dubbing material around and between them to create an enlarged head. Whip finish, and lacquer the head in the normal fashion. Short strips of the line will cause the fly to dart. On the pauses, the forward part of the body will drop, trailing the tail portion behind it. This creates the up and down swimming motion of a damselfly nymph and often provokes savage strikes.

Tying a Black Dragonfly Nymph

This pattern was selected as an example of one method of tying a dragonfly nymph. It can be used with all types of dragonfly patterns, but you must adjust the proportions and the hook length to the fly. In this case, the pattern is about equally divided between abdomen and the stout thorax and head. Dragonfly nymphs can be dragged slowly along the bottom or darted through the water with short strips.

Hook: x-2x long wet fly or nymph
Thread: 6/0 black
Underbody: shaped plastic or lead
Rib: stipped black goose quill
Abdomen: blackish gray fur
Wing pad: shaped goose marginal
Thorax: goose quill over black fur
Legs: knotted goose quill fibers
Eyes: black mono or bead chain
Head: goose quill over black fur

The pattern is begun by binding in a shaped underbody to form the foundation for the fly. Generally, it should taper to the front of the abdomen, be parallel through the thorax, and have a slight reverse taper on the head. The underbody should be lashed in place with crossed wraps of thread, and glued with a good CA adhesive. Once the underbody has dried and is firmly fixed in place, the thread should be carried to the rear of the shank. Prepare a strip of goose wing quill by nicking the rachis (the central, plastic-like portion of the feather) from a natural Canada goose wing feather or a dyed black goose wing feather with a razorblade or a knife. The hard, surface layer is grasped with tweezers or a pair of forceps and peeled back. If too much of the foam-like central part of the feather adheres, scrape it with a knife blade or razorblade to

remove the material, leaving a thin, dark, translucent strip that is tapered from tip to base. Bind in the quill strip by its thin tip and let it hang behind the fly. Dub the abdomen with sooty gray fur, following the taper of the underbody. Wind the rib closely to thorax area, leaving only a thin line of dubbing between the quill wraps. Bind off the quill strip at the rear of the thorax, and trim the excess away. (You may want to save it for another pattern.) Knot six goose wing fibers about half-way down the fiber and bind them on the shank in pairs with the rear legs directed back, the middle ones to the side and the front ones slightly forward. Prepare a strip of goose wing quill by clipping a piece from the wing feather and using either vinyl cement or spray fixative to bind it together. Shape the wings by clipping a v-notch in the center and tapering the outside edges. Set the wings in place, overlapping the front portion of the abdomen, and bind them in place with several turns of thread, and pulling the strip back over the body. Dub the thorax heavily, using turns of dubbing to separate and position the legs. Bind in the eyes right behind the hook eye, cross whipping them in place and applying a drop of CA cement to secure the wraps. Return the thread to behind the eyes, and pull the quill strip forward, binding it down over the thorax. Dub the area between and around the eyes to form a robust head, then pull the black quill forward and bind it in place with several turns of thread in front of the eyes. Trim away the excess quill material, wind a small band of thread to cover the area, whip finish and apply a drop or two of head cement to the windings. Complete the fly by applying head cement to the goose wing quill strip used for ribbing the abdomen.

Variations on this pattern include both short, stout nymphs and longer more streamlined ones. They may be tied in black, dark gray, dark brown, light brown, light olive and dark olive. All of them can be effective at some times and locations. Note that the longer types of nymphs tend to be widest about two-thirds of the way up their abdomens from the rear, narrowing into the thorax and becoming wider again at the head. Remember these species tend to be most abundant in relatively still or slow moving areas.

Fishing Them

These nymphs are mostly clambering or burrowing species, or species that only attempt to swim when dislodged from their hiding places. Many of them will writhe or lash about when suspended in the water column, either to escape their nymphal skin upon hatching or to seek shelter. Damselfly nymphs swim with a vertical lashing motion that can propel them through the water fairly quickly, and dragonflies can jet through the water quickly when disturbed. These jetting movements are relatively short but quick.

All of the nymph fishing techniques discussed earlier are useful with these patterns as well. Dead drifted nymphs can often prove attractive to fish, but adding a bit of stripping movement or rod action to the drift may produce more strikes. Generally, a hand twist retrieve or a series of short, sharp strips will suffice for most of the flies presented here. Occasionally, using a sweep of the rod and a stripping motion to bring the fly toward the surface at the end of a cast can bring aggressive strikes from the fish in the area.

Expect solid takes on large nymphs like dragonflies and hellgrammites. Fish seek them actively and are used to hitting them hard, both to prevent being bitten back and to avoid competition from other fish for the big food items. In still waters, dragonflies and damselflies fished around and among vegetation can often be the ticket for good action on the long rod.

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 types of larvae presented 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.

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.