tie the knot
fly fishing instruction

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Baker Springs
Fly Fishing Workshop for Women
Summer of 2002

8:00 a.m.	Meet at the Baker Springs Ranch 13013 Frontage Road Manhattan, MT 59741
8:30 a.m.	A visit with Bud Lilly (Baker Springs River Keeper)
9:00 a.m.	In the Beginning there was... the rod and its parts fly-line, leaders & tippet knots, (you may need to gather your reading glasses!)
10:30 a.m.	Introducing the Cast how to line management
11:30	Match the Hatch identifying bugs and those tied to match them
NOON	Food Reward! Time to eat.
1:00 p.m.	The Hook-Up pond fishing characteristics fishing
3:00 p.m.	The Drift stream fishing characteristics fishing
5:00 p.m.	Let's Wrap it Up words and memories

BARBECUE TIME!

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Fly Fishing Terminology and Literature References

Equipment

1. *Rod vs. Pole*: Fly fishers use a rod. Tom Sawyer used a pole.
2. *Fly Line*: The thick, colored line on the reel.
3. *Butt Section*: A section of thick, clear line, two feet long, attached the fly line.
4. *Leader:* The clear line that is attached to the butt section that fools the fish.
5. *Tippit*: Can be attached to the leader to lengthen it or change the diameter of the end of the leader.

Flies

1. *Dry fly*: Flies that float on the surface of the water.
2. *Wet fly*: Flies that are used to fish below the surface of the water.
3. *Attractor*: Not a direct match to any one insect. A hodge-podge fly that attracts attention.
4. *Streamer*: Imitates small fish like Minnows or Sculpin.
5. *Hatch*: Term used to describe when an insect is hatching from its nymph stage and flying on the surface of the water or near vegetation along river banks.

Casting

1. *Pick up/lie down*: Lifting the fly line up off the water and laying it straight back down.
2. *False casting*: Continuously keeping the fly line in the air, casting forward and back in order to achieve greater distance or perfecting placement.
3. *Loops*: Created in the fly line with the casting motion. Loops are essential for good casting.
4. *Roll cast*: Particular technique of casting used when there is an obstructed back cast.
5. *Shooting line*: Creating more distance in the cast by letting more line out through your fingers on the forward cast.
6. *Mending the line:* The fly line needs to be behind the fly for proper presentation. After casting, it is often necessary to adjust the line behind the fly with a looping motion.
7. *Drag:* When a fly does not travel at the same natural speed as the water and creates an artificial looking pattern (wake) in the water–this is a bad thing.
8. *Drag free float*: When the presentation of the fly replicates a natural (wake-free) floating bug on the water–this is a good thing.

Literature

Gary Borger, *Presentation*, (Wausau, WI: Tomorrow River Press, 1995, ISBN# 0-9628392-5-6)

Dave Hughes, *Western Streamside Guide,* (Portland, OR: Frank Amato Publications, Inc, 1998, ISBN# 1-57188-112-3)

Tom Rosenbauer, *Reading Trout Streams*, (New York, NY: Nick Lyons Books, 1988, ISBN# 0-941130-77-0)

Tom Rosenbauer, *The Orvis Fly-Fishing Guide*, (New York, NY: Nick Lyons Books, 1986, ISBN# 0-941130-91-6)

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List of What to Bring

Must Have

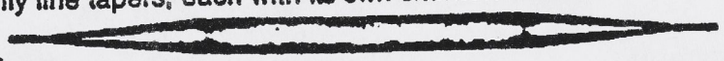
Fishing License
Paper & Pencil
Hat
Sun glasses, polarized (clip-ons work too)
Sunscreen & Chap Stick
Rain Gear
Shoes for wading. You will step into the stream and ponds, so either an old pair of shoes or wading boots.
Fly rod, (4, 5 or 6 weight) *If you need to borrow a fly rod, please let us know.
Reel and floating line
One leader, size 9' 4x or 5x
You and a smile

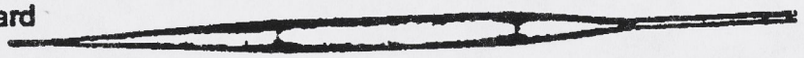
When you are ready, a well stocked vest would have:

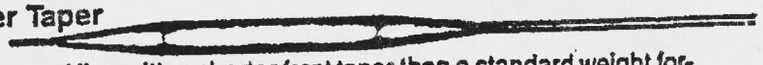
Fly boxes (there is never enough)
Leaders
Tippet
Line cleaner
Fly dressing
Split shot
Strike indicators
Clippers
Forceps
River Log/Diary
First Aid Kit
Personal Products
Sunscreen & Chap Stick
Cotton fabric to dry flies
Insect repellant
Camera (proof)

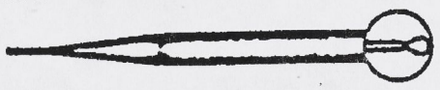
Fly Line Tapers

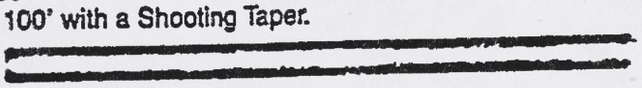
There are five types of fly line tapers, each with its own characteristics:

DT = Double Taper 
Recommended when the most delicate presentation possible is needed and when long casts are not necessary. The DT line is also best for roll casts. DT lines taper from the middle to the ends.

WF = Weight Forward 
Most of the weight is carried in the forward section, then quickly tapers down to a slim running line. WF lines are the best all-around lines.

WF Bass Bug/Saltwater Taper 
Can be cast longer distances. This is a weight forward line with a shorter front taper than a standard weight forward. Heavier, wind resistant flies can be cast within close and medium ranges with less effort and less false casting.

ST = Shooting Taper A short (30') 
line made for extremely long distance casting. Use a running line of up to 100' with a Shooting Taper.

L = Level Line When economy is the primary consideration, this 
is the line. Recommended primarily for live bait fishing with a fly rod.

Floating, Sinking & Floating/Sinking Lines

F=Floating – The most popular and versatile fly line. Best for fishing on or near the surface but it can also be used subsurface with weighted flies or weighted leaders.

S=Sinking – Opens a whole new, underwater world to fly fishermen, especially recommended for subsurface fly fishing in lakes. Several sink rates are available. The deeper you fish, the faster the sink rate you need. Fast Sinking is recommended for 5-20' depths; Extra Fast, to 25' depths; Super Fast for getting to the bottom of big rivers or deep holes and channels beyond 25'.

F/S=Floating/Sinking – Usually called a sinking tip line, this type of line has a front section that sinks while the remainder of the line floats. Easier to use than a full sinking line, especially in current. The faster the current, the faster the sink rate you need.

FLY LINES

In fly casting, we are casting the weight of the line; the leader and fly just follow along. The cast is made possible by the flex and recovery of the rod due to the line's weight as we make our casting stroke. For each rod there is a weight which will make the rod perform at its best. To standardize these weights, the tackle manufactureres have devised a numbering system for fly lines which indicate the weight of each line for the first 30 feet (not including any tapered section). Fly rods are now labeled to indicate the line weight which the manufacturer believes will bring out the rod's best performance. The numbers range from 1 to 15, with most trout rods calling for a #6,7 or 8 line.

Once we know what weight line to use, we have three other things to consider in our choice of line, all of which are determined by what kind of fishing we will do.

First, you will decide upon a floating(F) or sinking(S) line; and if a sinkng line, you will decide the sink-rate(1,2,3,4) and whether all of the line sinks, or just the first 10, 20, or 30 feet sinks.

Second, you will consider the kind of taper you want the line to have.

Third, you will decide what color of line is best for you. We recommend that you buy a line that is easy for you to see. Do not worry about the Fish seeing your line.....he will, no matter what color you use. Also, there is a good deal of mis-information about what color of floating line is most visible to the fish which many people still perpetuate. In any event, there is a decided advantage of being able to see the line in or on the water and in the air.

Lines are labeled so that you can easily determine all of the above characteristics, such as:

DT7F means double tapered - #7 weight - floating
WF8S4 means weight forward - #8 weight - #4 Sinking
WF7S/F3 means wight forward - #7 weight - #3 Sinking tip

We recommend that you choose lines made by Corland (444 Series) or Scientific Anglers (Air Cel Supreme, Air Cel, or Wet Cell Series). **Don't make the mistake of buying less expensive brands!**

4 Steps *to* Choosing a Fly Rod

Step 1. Find the proper line weight. The line weight determines the size of the fly you can accurately cast and the size of the fish you're pursuing. Line weights come in sizes 1 through 14 with 1 being the lightest. Lighter lines are usually used for smaller fish in smaller water. Conversely, when fishing large rivers and saltwater, go to heavier lines to throw larger flies. Decide where and what you're fishing for and choose a line in that category. The species chart on page 6 will help. To find the line weight at a glance, look for the third number in a rod name. For example, an 864 is a 4-weight rod.

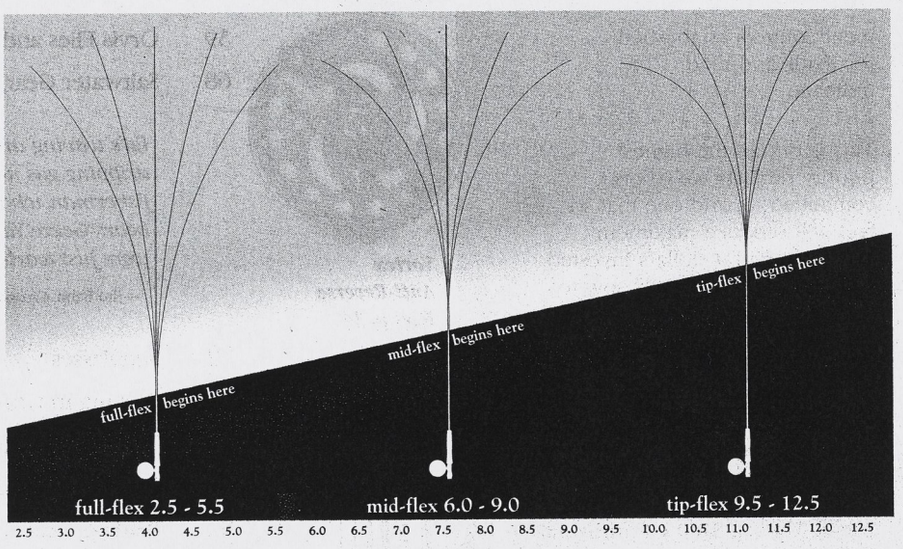
Step 2. Choose the rod length. Small streams with low overhanging brush are best fished with a shorter rod that gives you more control in tight spaces. Larger rivers and saltwater require longer casts and a longer rod. Longer rods also help greatly in situations where reaching and mending line are necessary. Trout anglers often fish with rods from 7 to 9 feet in length depending on the type of water they're fishing. Saltwater anglers generally use 9- and 9½-foot rods for big open water. Double-handed salmon rods can be up to 15 feet long. To find the rod length at a glance, look for the first two numbers in a rod name. For example, an 864 measures 8 feet, 6 inches.

Step 3. Choose your flex. It's largely a matter of personal preference, but it's important. It's really what makes you prefer one rod over another. The Orvis Flex Index makes this choice easier than ever.

Step 4. Choose a rod series that best meets your needs. The rod series guide on the facing page will help you choose from among four series of Orvis rods: Our premier Trident TL, Silver Label, Superfine, and Clearwater. Within each rod series you'll find a rod to meet your specific fishing needs. Whatever Orvis rod you choose, you're selecting the best rod available, the product of a half-million dollar investment in rod design and rod-building technology, and 150 years of fly-fishing experience.

What is Flex Index?

Confused by the term "rod action"? We've made it simple for you. Our Flex Index system tells you what a rod will feel like. This system, years in development, was created with the help of anglers of all skill levels in addition to our own rod engineers. Each and every rod that passes our quality control is measured electronically for its Flex Index, guaranteeing you the finest and most consistent fly rods in the world.



Full-Flex: 2.5 - 5.5

- Well-suited for close-range, delicate casting
- Protects light tippets best because of Full-Flex shock absorption
- Responds well to a gentle casting stroke
- Offers superior "feel" when fighting a fish
- A favorite traditional action for Orvis anglers for many years

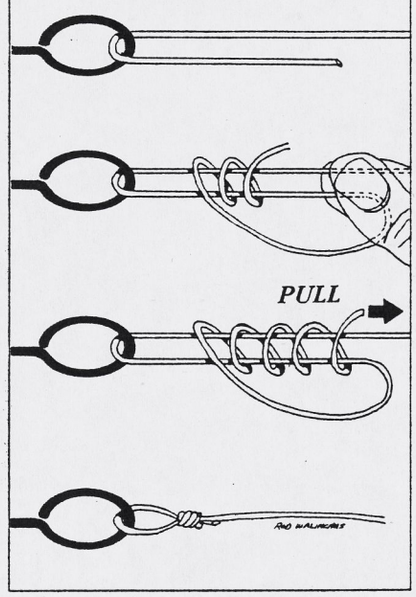
Mid-Flex: 6.0 - 9.0

- Excellent performance over a wide range of conditions and casting styles
- Great combination of butt strength for fighting fish and medium flex for casting ease
- An excellent measure of tippet protection
- For the angler who needs one rod for a variety of conditions

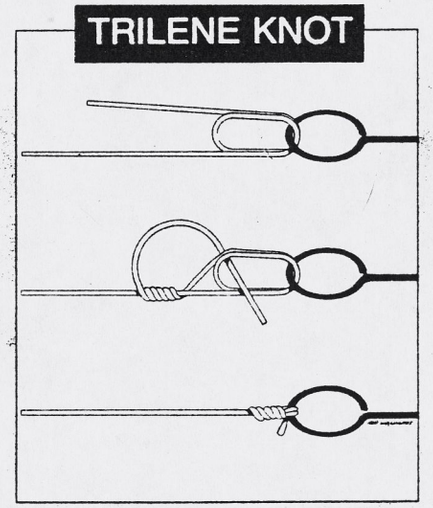
Tip-Flex: 9.5 - 12.5

- Light tip gives "light-in-the-hand" feel
- Gives the tightest casting loops for greatest range and distance
- Allows quick, short casting strokes with minimal rod angle change
- Improved accuracy due to minimal movement
- Less movement improves tracking and resists "wind loading"
- Superior big-fish "backbone" (in upper line weights) due to strong butt section

DUNCAN LOOP

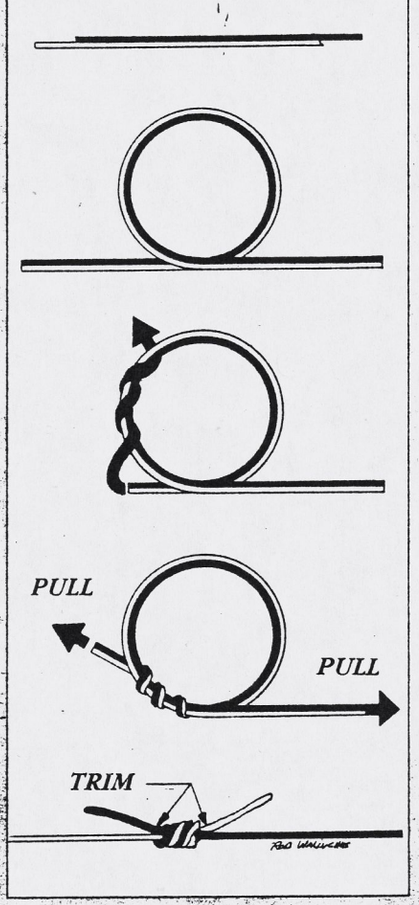


TRILENE KNOT

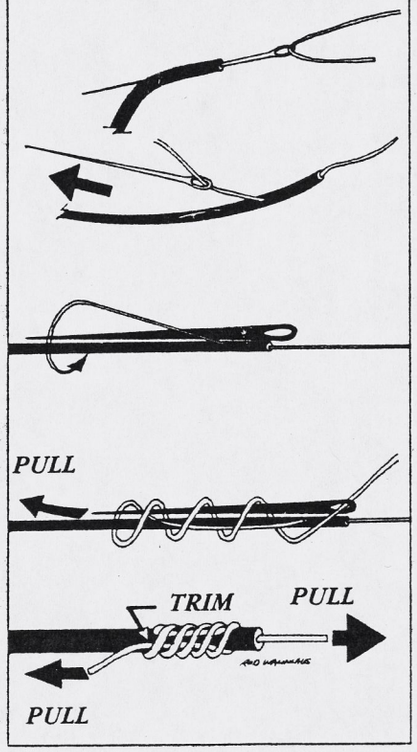


Tippet to Leader

TRIPLE SURGEON'S

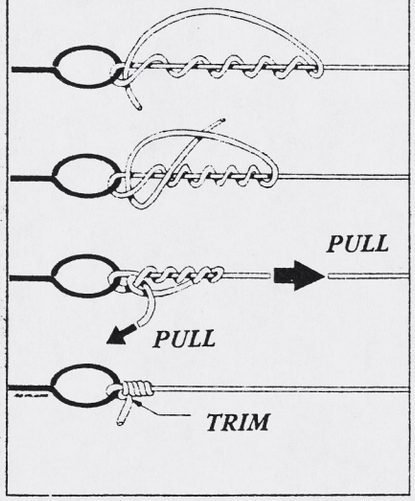


NEEDLE KNOT



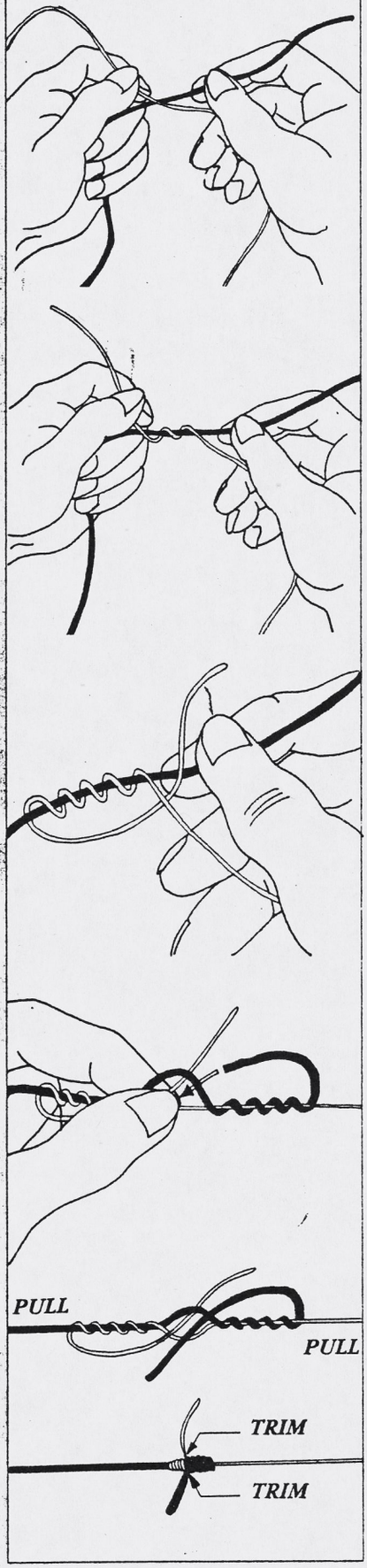
Tie on Fly

IMPROVED CLINCH



Leader to Butt section

BLOOD KNOT



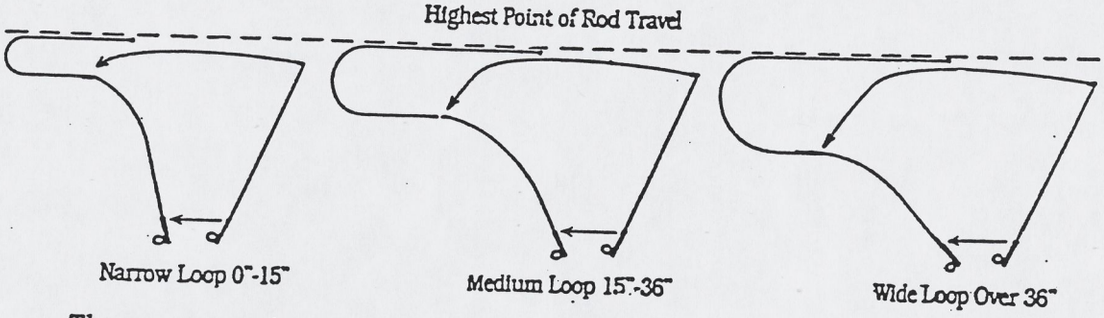
RODNEY WALINCHUS ILLUSTRATIONS

CASTING CLINIC

By Mel Krieger and Tom Morgan

When trying to improve your technique, you will be confronted by two immediate problems. The first is to identify your mistakes; the second is to determine how to correct them.

The primary objective in fly casting is to present the fly a desired distance by casting a weighted line. This is best done by properly applying the power to the rod to form a correct loop in the line. This loop forces the line to roll out and present the fly.



There are three correct loops illustrated by figure A. When the power is applied to the rod tip over a wider arc, the loops become wider; narrower loops are created by stopping the rod in a higher position and by using a narrower casting arc. Where you stop the rod tip on your forward and back casts determines the size of the loop. The size of a loop is generally the difference between the highest point of the rod travel and the point where the tip stops.

It is important to be able to control and to change the loop size to cover all fishing conditions. Wide loops give you the low line speed needed for delicate fishing. The medium loop covers most fishing conditions, providing a moderate line speed. Narrow loops have the least air resistance and the highest line speed. They are superb for long-distance casting, penetrating wind, and presenting the fly accurately.

BASIC CASTING STROKE

Let us analyze a casting stroke that will correctly position your rod to form these loops. The first step is to grip the rod properly. We recommend putting your thumb on top or slightly to the side, as in Figure B. These grips are comfortable and offer excellent strength and control.

The traditional clock face is used to show the point where the rod stops. We have separated the clock face to more accurately depict the fly casting stroke.

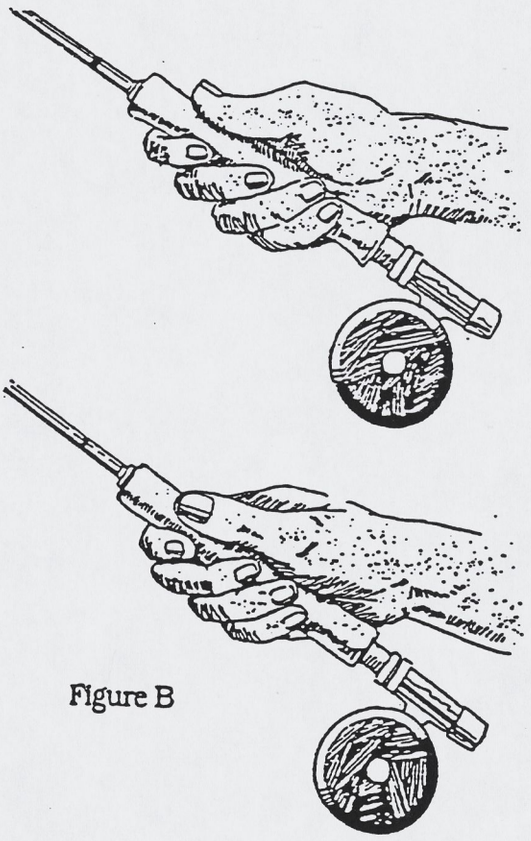
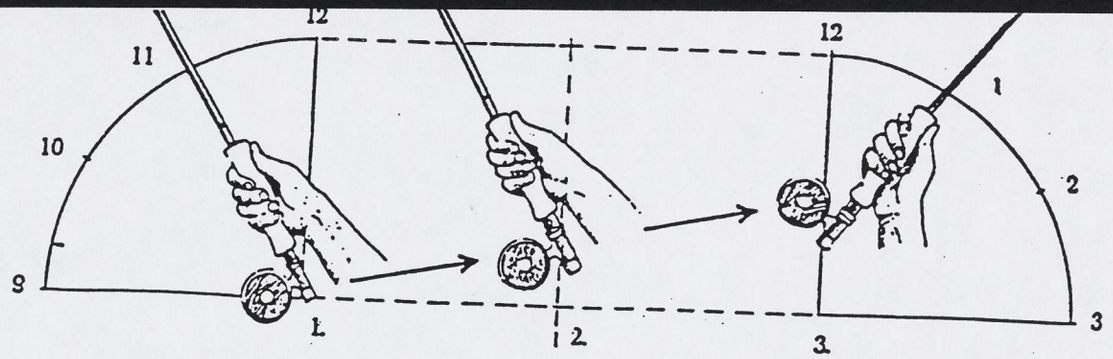


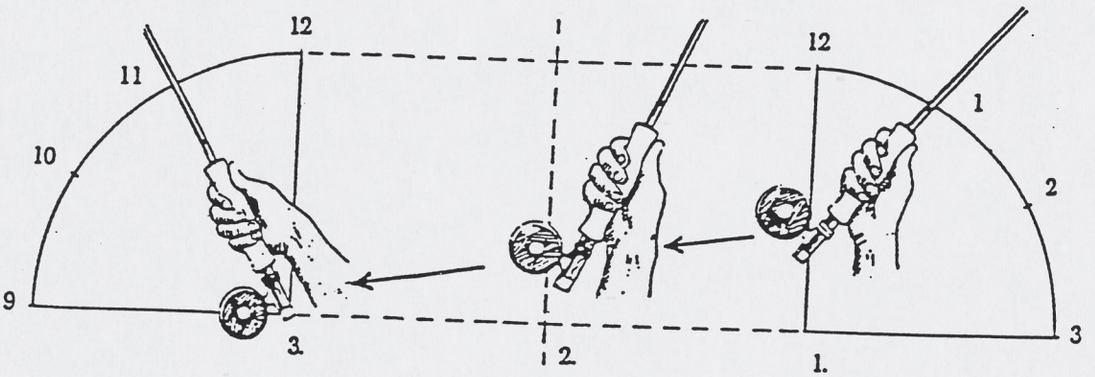
Figure B



(Figure C)

BACK CAST (FIGURE C)

1. Start with the rod at 11 o'clock, the forearm about 45° and the wrist depressed.
2. Pull the hand up and back to position 2.
3. Tilt the rod back stopping about 1 o'clock, position 3. Don't permit the wrist to open past 45°. Wait until the line has almost straightened behind you. (Drifting the rod back slightly after the loop is formed will improve the timing and smoothness of the forward cast.)



(FIGURE D)

FORWARD CAST (FIGURE D)

1. The rod is at 1 o'clock, the forearm is vertical, the wrist is open to a maximum of 45° and the line has straightened.
2. Push the hand forward and slightly down as in position 2.
3. Tilt the rod forward stopping at about 11 o'clock to form your loop, position 3. The wrist is depressed with the rod butt almost touching the forearm. (As in the back cast, when false casting, you may drift the rod forward.)

From position 1 through 3, in both the back and forward casts, the application of power must be progressive, continuous, and as smooth as possible. An average cast is from 11 to 1 o'clock. Use a narrower stroke for very short casts and a wider stroke for long casts.

The back cast and forward cast should be in a straight line with no side-to-side wobble. With a controlled wrist, the line should travel in the same direction and parallel to the movement of the casting hand. It is important to note though that the back cast and forward cast should be in two separate planes as in Figure F.

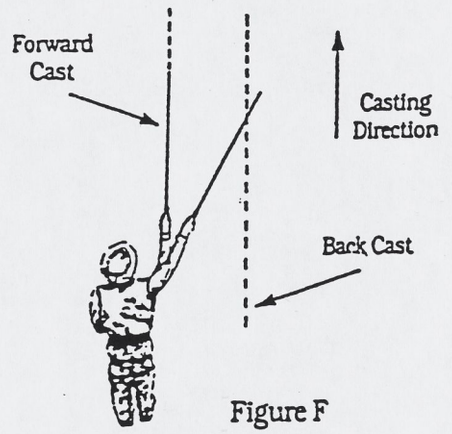


Figure F

Figure G1 shows a normal false cast stroke. Figure G2 shows the casting plane tipped for a higher back cast.

This concludes the basic casting stroke. All presentation casts such as curved and slack line are simply variations of the basic stroke.

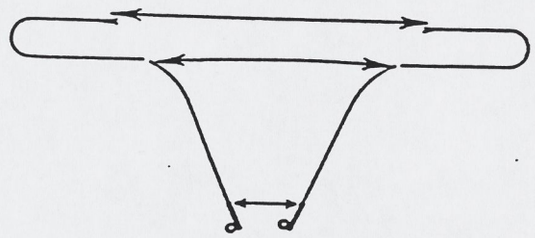


Figure G1

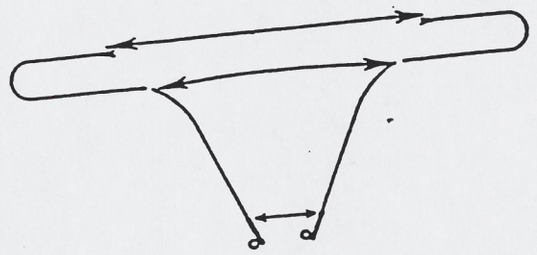


Figure G2

LOOPS

Figure E shows a correct loop, a non-loop, and a tailing loop. The two principal problems in fly casting result in non-loops and tailing or closed loops.

Correct Loop - A correct loop, shaped like a tipped over "V" or "U", offers excellent control of the fly line and fly. These correct loops are the result of a smooth, even, continuous application of power and a straight line path of the rod tip.

Non-Loop - You are moving the rod through too wide an arc. You are dropping the rod tip too low on both the back and forward casts. You are not loading (bending) the rod sufficiently. You are opening your wrist past 45° The tip of the rod is traveling in a convex path. CORRECTION: Narrow the casting arc. Stop the rod higher. Move your hand in a straighter line. Maintain a controlled wrist, opening it less than 45 . Review Figures C and D, stopping your rod as shown.

Tailing Loops - You are applying too much power too soon in the forward stroke - the most common error in casting. The casting stroke is jerky. The casting stroke is too short. The rod tip is travelling in a concave path. CORRECTION: Apply the power progressively. Apply the power smoothly and continuously. Lengthen your casting stroke. This is particularly true when you are trying to get a distance cast. You need to apply the power over a longer period of time. This application of power is the most difficult aspect of casting.

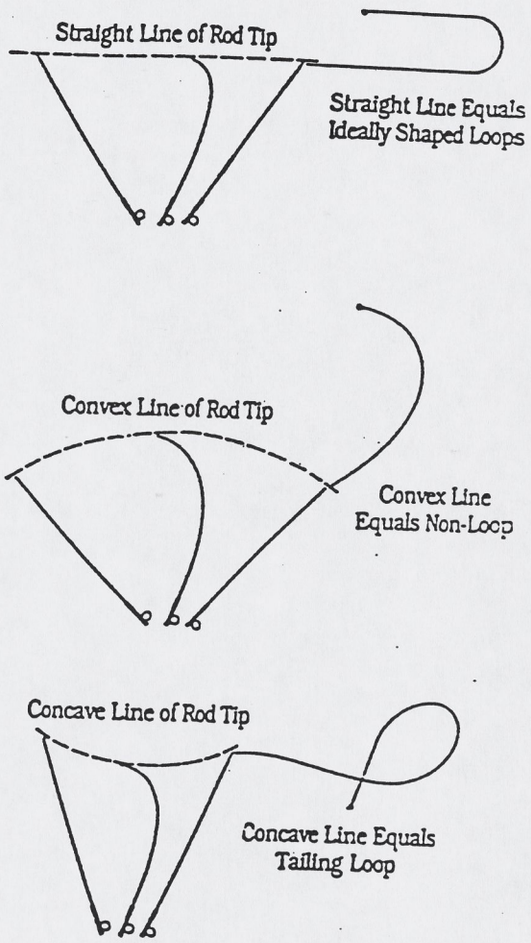


Figure E

FOUR POINTS TO REMEMBER

1. Watch the line - Learn to watch your line and to recognize the types of loops you are casting. By evaluating the loops, you can determine any errors in your casts. Correct your errors by following these simple diagrams and techniques.

2. Apply the power smoothly and progressively - If you apply too much power too soon or too roughly, your line will form a tailing loop. This prevents the line from rolling out correctly. A tailing loop causes wind knots, and the fly to be caught on the line or to hit the rod. These loops are frequently formed when trying for long distances.

3. Use only the power needed - Too much power cause the rod and line to bounce excessively, resulting in a rough presentation and poor line control. Practice casting a specific distance with the least power you can to complete the cast.

4. Stop the rod to control your arc - Stop the rod on the back and forward casts to form the size loop you want. Avoid opening your wrist past 45° on the back cast.

During casting, all of the individual components work together to present the line. When one is done incorrectly, it may affect another. If you use too much power, you may also be applying it too soon, tailing the loop. Too much power also makes it difficult to stop the rod to form the correct loop. When a rod is dropped down too far on the back cast, it is difficult to apply the power in a straight line, and too wide a loop will result. Try to integrate all of the components into a smooth, easy stroke.

We sincerely hope this brief clinic has helped you understand the fundamentals of the basic casting stroke. The only way you can learn them is to practice before you can go fishing. You should spend your time on the stream enjoying your sport, not trying to learn to cast. A few hours of practice will provide a lifetime of enjoyment.

COMMON CASTING PROBLEMS AND HOW TO CORRECT THEM

LOW BACK CAST

Cause - Hitting the water or ground on the back cast is caused by continuing to apply power too long, thereby driving the line down or by insufficient line speed to turn over the back cast.

Correction - Make the back cast with a brisk movement up and back, holding the wrist stiff. Stop power application when rod is vertical.

WIND KNOTS

Cause - Knots in the leader are caused by tipping the rod forward first, then pushing it ahead, an instinctive fault when typing too hard.

Correction - Bring the rod forward in one o'clock position, tip it ahead only at the conclusion of the forward movement.

HOOKING LINE

Hooking the line with the fly, or the fly dropping below the line on the way out are symptoms of the same casting fault, and the correction is the same as for wind knots.

PILING UP LINE AND LEADER AT END OF CAST

Cause - Piling up the line and leader is usually caused by releasing the line too soon on the forward cast or continuing the application of power to far down on the forward cast, after the line is released. These faults are usually accompanied by waving the rod through a wide arc, rather than pushing it briskly.

Correction - Release line after end of power application. Accelerate rod briskly in the one o"clock position, tip it ahead sharply at the end of the forward movement, and stop it at ten o'clock. Then release the line held in the left hand.

SNAPPING OFF FLY

Cause - Snapping off flies and popping the line on the back cast are caused either by starting the forward cast too soon, before the back cast has time to straighten, or else by failure to use sufficient force in the back cast. In this case, it would never staighten, no matter how long you waited.

Correction - Watch the back cast and start the forward cast when line and leader are out straight behind. Use sufficient force in making the back cast so they will straighten.

HITTING ROD WITH FLY

Cause - Hitting the rod with the fly is caused by the same casting fault as typing wind knots in the leader-pushing the rod ahead after you tip it forward.

Corection - Bring the rod forward in one o'clock position, tip it ahead last, then release the line in your left hand. As a last resort, tip the rod slightly away from yourself while casting though this merely prevents the fly from hitting the rod and doesn't correct the cause of the difficulty.

SLAPPING WATER

Cause - Splashing the line, leader, and fly down on the water, sometimes hard enough to sink a dry fly, is caused by aiming the forward cast too low.

Correction - Tilt the arc of power application backward a little so the forward cast straightens two or three feet above the water, then settles gently. In other words, aim your forward cast high.

LINE WON'T GO OUT

Cause - When the line won't go out and straighten, even 30 feet of it, one or both of two casting faults committed by all beginners are nearly always to blame. First, waving the rod through a great, wide arc, often from three o'clock to nine, instead of pushing it brisky through a narrow arc. Second, permitting line to slip through the guides during the application of power.

Correction - Have somebody watch to make sure you keep the rod between one o'clock and ten on the forward cast. Push the entire rod ahead with arm movement to lengthen power applicaion if necessary, but keep the arc between one and ten. Accelerate rod rapidly-make it bend-and tip it ahead last. Make sure you stop power application on the back cast at twelve o'clock, then let rod drift back to one as the back cast straightens.

Never let line slip out through the guides while applying power. Instead, pull in a foot or so on both the back and forward casts. Release line only when you stop the rod at twelve on the back cast and ten on the forward cast.

Entomology
(Bugs)

Trout flies are tied to resemble the various insects that trout eat as well as imitating small fish, sculpin, leeches , crustaceans and terrestrials. Materials used include fur, feathers, tinsel and various synthetic materials. Some flies are tied as attractors - not really an exact imitation, but something that will entice the fish. A good fly will look alive in the water. The size of the fly or hook is important when choosing your imitation, try to match the size of the food the fish are eating.

Common Definitions

Hatch or Emergence is that point in time when the mature insect makes its way to the water surface or stream bank, where it splits its nymphal skin or pupal sheath to emerge as a winged adult.

Hatch also refers to the period in which a large concentration of insects of a species emerge at the same time.

Pre-Emergence activity is a period during which insects ready to hatch begin to increase their movement or activity on the stream bottom or intermediate water levels.

Nymph is the immature aquatic stage of stonefly, mayfly, dragonfly, damselfly and other aquatic insects.

Larva is the worm-like immature stage of development of the caddisflies, craneflies and others which is to these insects as the caterpillar is to the butterfly.

Pupa is the pre-adult stage between the larva and winged adult of caddisflies, ect.. As the cocooned caterpillar is the pre-adult stage of the butterfly.

Adult is the mature, winged stage of the aquatic insects.

Dun are the terms which refer to the newly-hatched adult mayfly; but this stage of development of the mayfly is sexually immature.

Spinner refer to the sexually mature mayfly. The mayfly dun flies from the water to the stream bank or brush where it sheds its skin or molts, and emerges fully developed.

Spinner Fall refers to the egg-laying return to the water by the mayflies, during which the females deposit their eggs and die exhausted and spent on the water's surface. Due to the potential

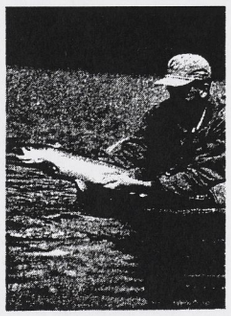
numbers and ease of capture, trout often feed ravenously and very selectively on these insects.

Most Common Food Sources for Trout

Caddisfly - Order Trichoptera
Mayfly - Order Ephemeroptera
Stonefly - Order Plecoptera
Midge - Order Diptera

Other food sources include: Terrestrial insects like grasshoppers, ants and beetles. Streamers imitate immature fish, minnows and sculpin. Leeches when imitated, are often called woolly buggers. Crustaceans, worms (San Juan) and eggs are other foods anglers can imitate.

A great book to have: "Western Streamside Guide" by Dave Hughes



WHAT FISH EAT

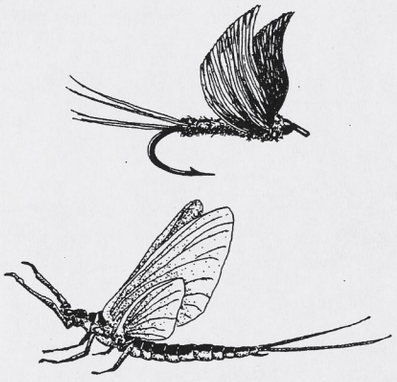
CARL RICHARDS

Recognizing insects and other foods that fish eat will help you catch more fish.

The Steady Diet

CERTAIN AQUATIC INSECTS make up the major portion of a fish's diet. The four main insect orders that emerge from our streams and lakes (listed by degree of their importance) are: mayflies (Ephemeroptera), caddisflies (Trichoptera), midges (Diptera), and stoneflies (Plecoptera).

To be an effective hatch-matcher you must at least be able to quickly differentiate between adult mayflies, caddisflies, midges, stoneflies, and all the immature stages of each of these orders. Many hatches and most spinner falls do not last very long. You do not have time to try four or five patterns on a trial-and-error basis. Rather, you should be able to choose the right fly at the right time; only then will you be able to hook your share of fish. It's not as difficult as you might think.



Mayflies are important insects to freshwater fly fishermen. They usually have three tails. The Sidewinder No-hackle Dun imitation is a good dry fly to use during a hatch of mayfly naturals. The mayfly above is a dun.

Mayflies

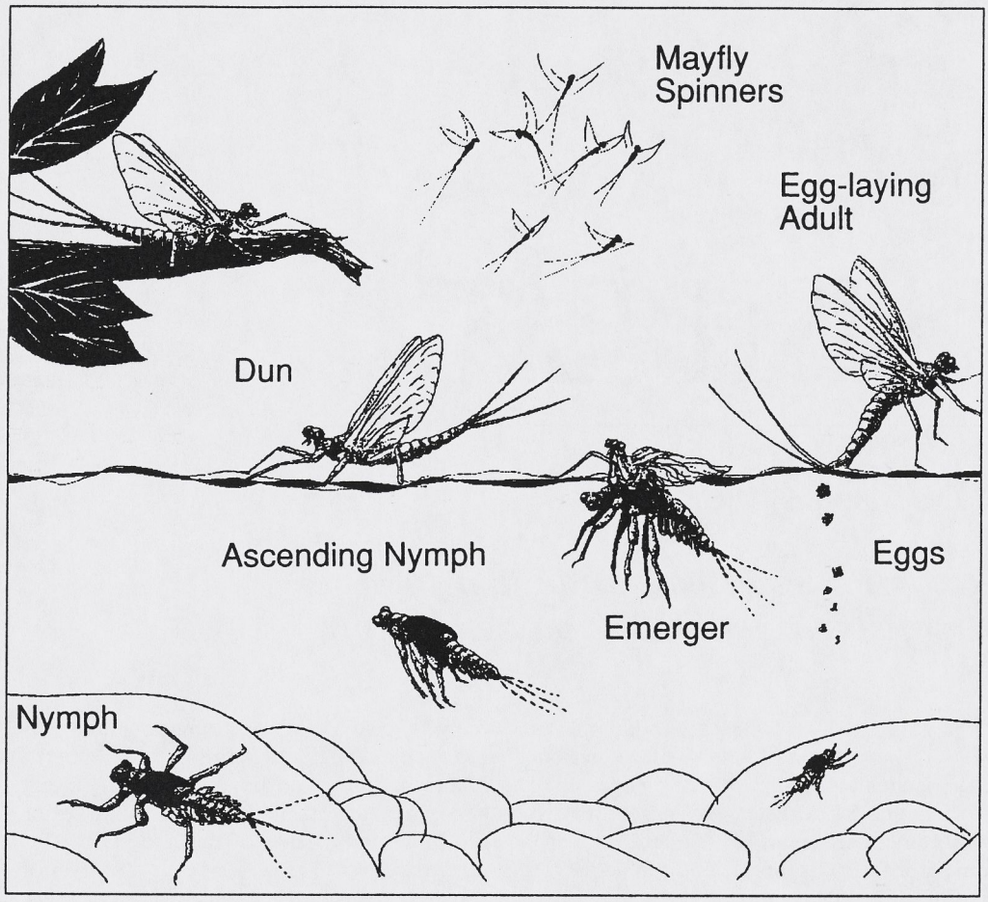
THE MAYFLY (Ephemeroptera) is the single most important order of trout-stream insect. All mayflies have two large, upright wings, two or three tails, and most have two very small hind wings. The look like little sailboats floating in the cur rent and are the *only* trout-stream insect with upright wings. The life cycle is: egg nymph, dun (subimago), spinner (imago).

The nymph: The eggs hatch into an underwater form called a nymph, which usually lasts about a year but may last two months to two years or more, depending on the species. They range in size from 3mm to 36mm or more and have three tails (rarely two) and gills emanating from the sides of the middle segments of the abdomen. The nymphs grow from a very small size through progressively larger stages, each stage, called an instar, is accompanied by a molt. They vary greatly in shape, depending on the ecosystem they have become adapted to, such as fast or slow water. Most are dirty tan to brown in color with a lighter underside, but they can vary from cream to olive to black.

The emergence: When the nymph is fully grown, it swims to the surface and changes into a winged fly called a dun (subimago) by splitting its nymphal skin and emerging from it. The dun rests on the surface, drying its wings, and then flies away to nearby trees or meadows. This entire procedure is called "the hatch". At this time the nymphs and the duns are extremely vulnerable. Before and during the hatch a standard fur-bodied type of mayfly nymph of the correct size and color fished wet is a good imitation to use. During the hatch a mayfly-dun imitation such as a Sidewinder No-hackle Dun is my personal choice.

A standard hackle pattern can be fairly effective if tied sparsely. The fur body is what really floats both the No-hackle Dun and the sparse standard pattern.

One of the most deadly patterns of all during an emergence is the floating nymph. A few years ago I purchased a stomach



The Mayfly Cycle

The mayfly life cycle is: egg, nymph, dun (subimago), spinner (imago). The nymphs hatch from the eggs and live on the bottom, where they become vulnerable to the fish if the current knocks them free or if they swim from one place to another. During emergence — the mayfly's most vulnerable stage — the nymphs swim to the surface, split their nymphal shucks, and emerge as duns. The duns drift on the surface for a short while before flying off to the streamside vegetation where they molt into spinners. The spinners return to the stream to mate above the water, deposit their eggs, and fall spent to the stream. Fish also eat the spinners.

pump so I could see what the fish were eating without damaging them. I learned, to my great surprise, how ignorant I was about how trout feed during a rise. During my first sessions with the pump, I selected good fish that were feeding regularly on the surface and that I believed to be taking only duns. On examining the stomach contents, I found these trout invariably took two or three nymphs for each floating dun. It was not nymphs at the beginning of the hatch and duns toward the end, as we had all been taught. It is my belief that trout prefer the floating nymphs because they have more time to capture the nymph. The dun, afterall, can fly away at any time, but the nymph cannot.

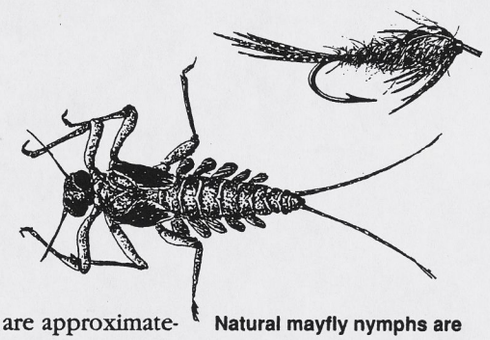
The spinner fall: After the dun has dried its wings and flown to the trees, it rests for a period of a few hours to a few days and then undergoes a final molt into a spinner (imago).

The dun is a drab insect with dull, opaque wings, and tails approximately equal in length to the body. The spinner is, by contrast, bright and shiny, with long tails (twice as long as the body), and clear transparent wings. The spinners return to the river, mate in a swarm (usually over riffles), and fall spent into the stream after egg-laying. During the spinner fall the correct imitation is a one-half-spent or full-spent mayfly spinner imitation. My personal choice is a Hen Spinner in the correct size and shape.

Spinner falls occur more often in the evening or at dark but can also happen during the morning hours, depending again upon the species and, of course, the weather. There are approximately 120 Ephemeroptera species of major importance to fly fishermen in the United States, and with a little observation, you will quickly become familiar with the important ones in your area. Usually one stream or geographic area has only about 10 to 15 species that are of great interest to the average fly fisher.

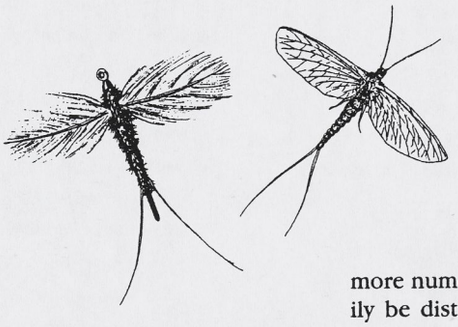
As a general rule, early-season mayflies (March-May) tend to be dark in color: dark

Nymph Natural and Pattern



Natural mayfly nymphs are not smooth; they have gills and legs that move about in the water. There are many types of fur nymphs that imitate the naturals.

Mayfly Spinners



A Hen-wing Spinner pattern is a good imitation of the natural spent spinner (right). Both lie on the water's surface with their wings flat.

gray wings and dark brown or olive bodies. Later, as the lighter yellows and greens appear, the prevalent insects are lighter in color, most likely to blend in with the background and escape their many predators. The wings become pale gray and the bodies yellow or pale buff or olive. The September and October emerging flies are dark tan. As the autumn leaves turn dark, so do the insects.

Caddisflies

CADDISFLIES ARE ALSO very important insects, and in some locations they are even more numerous than mayflies. They can easily be distinguished by their four wings of nearly equal length, which are covered with tiny hairs and, when at rest, are carried in an inverted V or tent over the back. They are usually medium to small in size (#14 to #24) and have no tails. There are more than 1,000 known species on this continent.

The life cycle of a caddis differs from the mayfly and follows this order: egg, larva, pupa, adult. The eggs are deposited in or near the water, eventually hatching into a worm, which may or may not build a case, depending on the species. Two large groups of caddis larvae exist. One group builds a case or house (evidently for protection and camouflage) in which the larva lives. These cases may be constructed of practically any material such as twigs, stones, and bits of leaf or bark. The other caddis are free-living, meaning they range about the bottom of the stream without cases. When matured, the larva makes a cocoon (much like a caterpillar) in which it changes into a pupa. When the pupa is fully developed, it cuts its way out of the cocoon and migrates to the surface. Some species crawl out of the water to emerge, and some drift in the film until the pupal skin is broken and the adult flies away. The adult caddis are able to live much longer than mayflies, because they can absorb water. Most species mate at rest, so the females are the ones taken by fish at egg-laying time. The eggs are deposited on the water, on vegetation overhanging the water, or under water by diving females.

During a caddis hatch three imitations are effective. Due to the drifting of the pupa in the film before emergence, a pupal imitation fished wet is often deadly. The stillborn adult, which is a pattern tied to imitate a fly stuck halfway out of the shuck on the surface, is in my experience the most deadly of all the patterns during an emergence. The dry Henryville Special is good at hatch time and during the egg-laying flight. A spent caddis is effective at the end of the fall of spent adults.

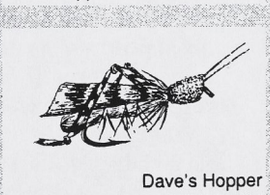
Of course, the angler must match the size

OTHER FOOD ITEMS

TROUT AND OTHER FRESHWATER gamefish, of course feed on many other food items besides the four major orders listed above. Although these other orders are normally of lesser importance, when they *are* numerous, fish will feed on them selectively, so a few representative imitations should be carried for the other aquatic, semi-aquatic, or terrestrial forms, such as dragonflies and damselflies (order Odonata), grasshoppers and crickets (order Orthoptera), leafhoppers, true bugs (order Hemiptera), spongilla flies (order Neuroptera), Dobsonflies, fish flies, alderflies (order Megaloptera), aquatic moths (order Lepidoptera), beetles (order Coleoptera), true flies (order Diptera), and aquatic wasps (order Hymenoptera).

As you can see, this is a diverse group of insects available for fish to feed upon, and furthermore, they have adapted to every type of ecosystem imaginable, from lotic (running waters) to lentic (standing waters) and everything in between. Some aquatic insects can survive and flourish in streams that periodically dry up completely.

Grasshopper

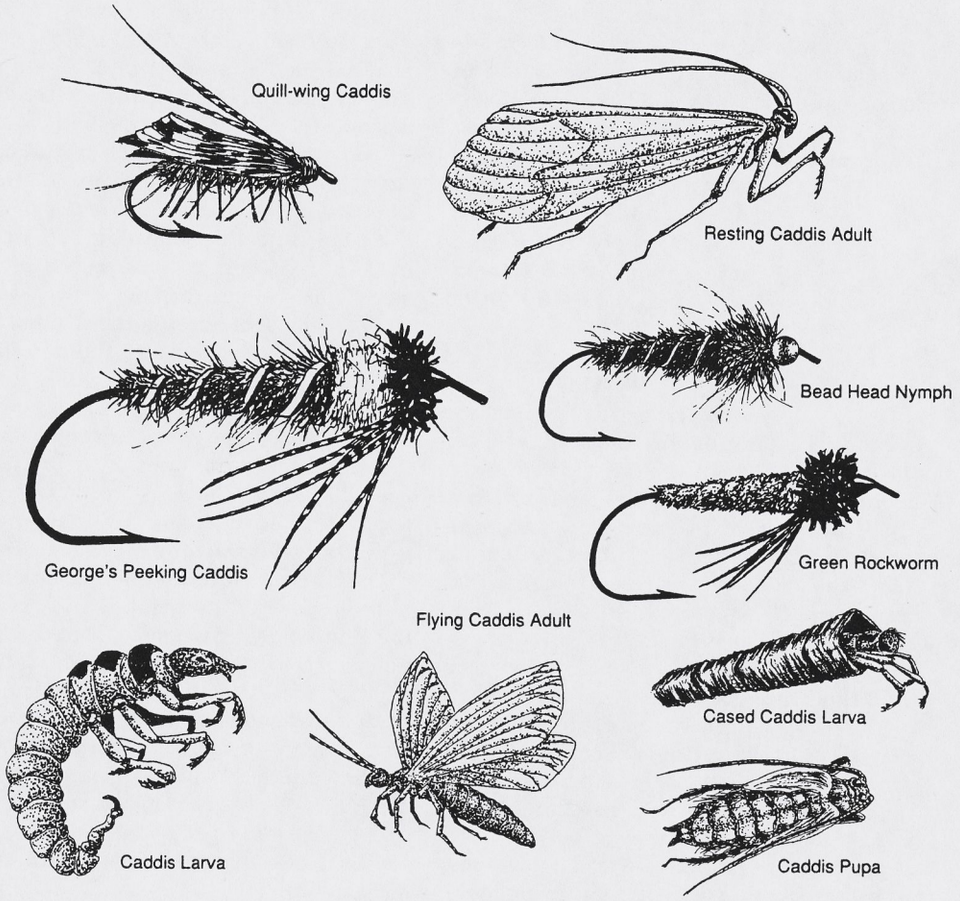


Dave's Hopper

In addition to aquatic insects, some crustaceans are heavily fed upon by trout and bass. Thus wet flies, fished deep to represent scuds, sowbugs, shrimp, crayfish, and other similar aquatic creatures are often very effective when no surface activity is apparent.

If all those weren't enough for the fly angler to imitate, quite often terrestrial insects get blown onto the water's surface. These are not normally as important as the aquatic insects, but at times, when large numbers appear on the surface, they can provide some very exciting fishing. Grasshoppers provide a large juicy meal and large fish will be on the lookout for them during late July, August, and September. Trout seem to relish ants, and in the fall, large flights of winged ants often appear in numbers. At these times the fish are very selective and antlike body imitations are essential.

Other terrestrial forms such as green oak worms, jassids, large beetles, and spiders when they are in season are also important. Most fly fishing with terrestrials is done with dry flies.



and color of the natural with the artificial. As with all flies, this cannot be done by observing the natural on the wing; a specimen must be captured and examined in the hand. Adult caddisflies are jumpy and wary, thus rather difficult to capture. Often an aquarium net is required. Caddisflies are attracted to bright lights, however, and during the evening your car lights can be a good collecting spot. With so many species existing, most anglers do not bother to identify this order precisely as to species. It is enough to be aware of the five main colors—tan, gray, olive, cream, dark brown—and to have reasonable imitations in sizes 14 to 20.

Midges

THESE FLIES HAVE ONLY two short wings (shorter than the body), which lie flat along the top of the body, usually slightly to the side in a V, and they have no tails. Most are small, size 22 to 28 or smaller. The life cycle is egg, larva, pupa, adult. At hatch time the pupa ascends to the surface where it drifts for a time; the winged insect then emerges and flies away.

During the hatch a pupa or stillborn artificial is usually effective; a hackled adult type can be used later during the emergence or at the egg-laying flight.

These flies are especially important to trout in slower moving water such as spring creeks and limestone streams. Some lake-dwelling midges are fairly large. They are rarely of much importance in faster currents. This is a very large and diverse group; they can be almost any color, but black and olive are common. When trout are feeding on midges, they can be extremely selective. Exact size in the artificial is often critical. An error of a single size (#20 instead of #22) can mean a discrepancy of over 30 percent, and almost always this is perceived by the critical eye of a trout. To be effective, close imitations are necessary.

Midge fishing is often considered the ultimate challenge in fly fishing, because the imitations are very tiny and leaders must, therefore, be extremely long and fine. Leaders of 10 to 14 feet with tippets of 6X, 7X, or 8X are the most effective sizes. Light rods with fine tips are required to protect

WHAT THE FLY IMITATES

#14-22 BLUE-WINGED OLIVE
Mayflies, midges

10-24 ADAMS
Mayflies, caddis, midges

12-20 RED QUILL
Mayflies, midges

12-20 LIGHT CAHILL
Mayflies, midges

10-14 AUSABLE WULFF
Mayflies, caddis

8-18 ROYAL WULFF
Mayflies, caddis

16-22 LEAF HOPPER
Jassids

16-22 BLACK ANT
Ants

10-14 LETORT HOPPER
Grasshoppers

12-18 POLYWING SPINNERS
WITH CREAM, BROWN, GRAY, OR OLIVE BODIES; GRAY OR WHITE WINGS
Mayfly spinners

10-18 HARE'S EAR
Mayflies, stoneflies, damselflies

10-14 ZUG BUG
Mayflies, stoneflies, damselflies, caddis larvae

10-14 MUSKRAT (GRAY)
Mayflies, caddis pupae, scuds, cress bugs

12-16 OTTER NYMPH
Scuds, cress bugs

16-22 MIDGE PUPAE
IN GRAY AND OLIVE
Midge pupae

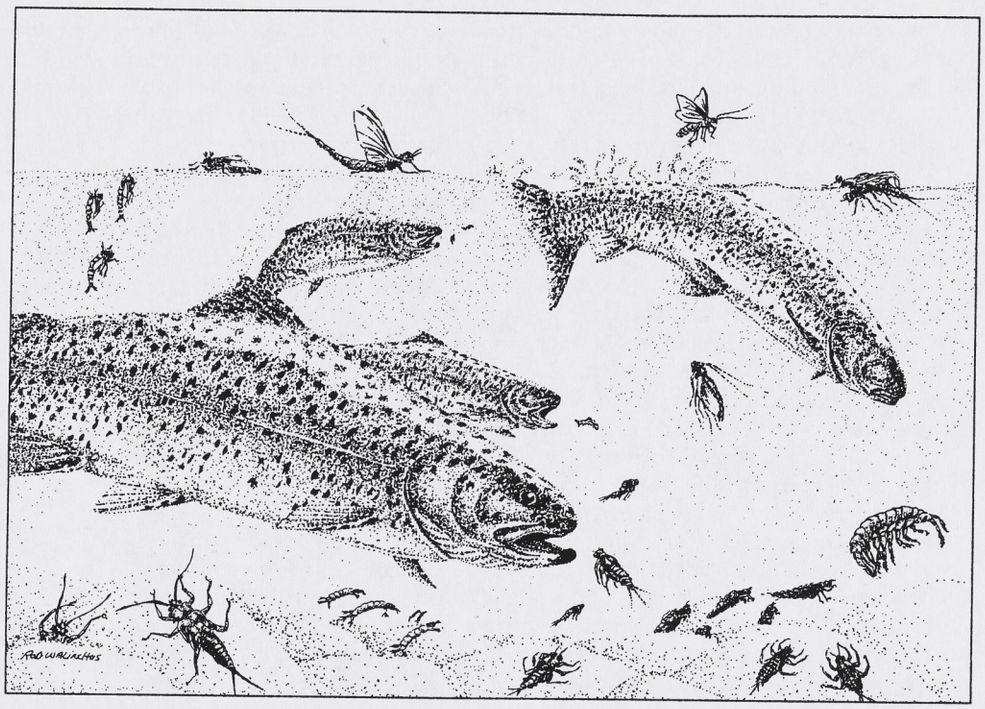
16-20 PEEKING CADDIS
Caddis pupae

6-12 WOOLLY WORM
Fishfly and alderfly larvae, damselflies, dragonflies, stoneflies, crayfish

16-22 BRASSIE
Midge pupae

6-12 CLOUSER'S DEEP MINNOWS
Minnows

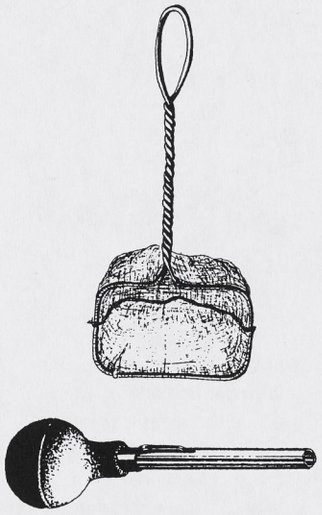
6-12 MUDDLER MINNOW
Sculpin, dragonfly nymphs; grasshopper (fished dry), crayfish



Selecting an Artificial

Learn to read the water to determine at which level the fish (trout in this case) are feeding in the water column. Then present your fly at that level for the best success.

The Net and The Pump



An aquarium net can be used to dip insects off the water for identification. A stomach pump is a good tool to use for sampling trout stomach contents without hurting the fish (be sure to use it according to the instructions).

the fine tippets when striking and fighting a hefty fish. Of course, there are very small mayflies (*Tricorythodes, Baetis, Pseudoeloeon*), caddis, and terrestrials that require the same light tackle, and while they are not technically midges, they are generally lumped together under the term midge fishing.

Stoneflies

THIS RATHER SMALL ORDER of flies is of very little importance in slow waters, yet in turbulent, rocky streams, such as the Madison and the Big Hole in Montana, they provide the largest flies and the most spectacular fishing of the season. In certain Oregon streams they are the second most important fish food. Stoneflies vary in size from very large to very small (#2 to #20). Adults have four long wings, which are hard, shiny, heavily veined, and held flat over the back when at rest.

The life cycle is egg, nymph, adult. The generally flatish nymphs are readily distinguished from mayfly nymphs since they have only two short tails, rather long antennae, no gills on the abdomen, and two equal wing cases. When the nymph is mature, most species (but not all) crawl to land and emerge. They mate at rest and return to the water a few days to a few weeks later to lay their eggs.

The emergence is important only in those species that emerge in water, and they are best imitated by a combination latex-and-fur stonefly nymph or a down-hair-wing dry imitation. The egg-layers are well imitated by an adult stonefly artificial with a lot of hackle to simulate moving wings. Many of the medium and small stones are yellow with a few showing olive, tan, and dark brown. Usually the underside of the nymph is much lighter than the top.

Selecting an Artificial

NOW ASSUME WE HAVE the preceding firmly in mind, we can distinguish between all the stages of all the naturals, and we know what pattern types to tie on to imitate the various stages of the four major orders of aquatic insects. How do we translate this knowledge into a fishing situation? Imagine you are in the middle of a pool with fish rising all around, flies buzzing in the air and drifting on the currents. How do you select the correct imitation? That's the meat of this discussion—how to pick an artificial at the right time that will take fish when they are feeding. It can be easy if you are not rattled by the feeding fish.

The first thing to do is find out what type or order of insect is on the water, and this is done by capturing one and examining it closely in the hand, preferably with an 8x or a 10X magnifying glass. If the flies are on the water, a simple tropical-fish aquarium net can be dipped onto the flow, and the current will carry the specimen into the net. If the fly is in the air, a simple net can be fixed to a stick and used like a butterfly net.

If fish are observed feeding underwater, two methods can be used to discover what they are feeding on. The best way is to catch a fish (usually *one* dummy can be taken using an attractor, such as a Coachman fished wet) and pump its stomach with a stomach pump. You then have proof positive of the fish's preference. If landing a fish is impossible, a simple wire seine can be held in the current while gravel and vegetation is dislodged upstream. Whatever is present will be washed into the seine and can be examined closely.

Once the specimen is in hand, the order and stage is determined (e.g., wet fly, nymph, dun, or spinner). Then select an artificial of the correct size, shape, coloration, and type from the fly box, and you should be in business quickly and logically. This whole process takes place in the heat of battle, however, and a certain calm deduction is required. Most people get so excited by splashing fish that they take a wild guess as to the correct pattern and immediately begin to flail the water. They normally end up exhausted, frustrated, and fishless. To be successful you must remain calm, patiently obtain a specimen, and know a mayfly has upright wings, a caddis has tent-shaped wings, a stonefly has flat wings over the body, and a midge has flat, V-shaped wings (flat but to the side of the body), and you must know which artificial type works when each natural is on the water. If you are thoroughly familiar with these facts, you will be light-years ahead of most anglers and much more effective.

The Multiple Hatch

I HAVE JUST DESCRIBED a simple hatch where only one or two types of insects are hatching at a time. Any observant fly fisher with a little knowledge of practical entomology should be able to choose his pattern and do well during such a hatch.

A much more difficult experience occurs during a multiple hatch. At times, especially on rich streams, many different types of insects can be on the water at the same time. On the lime-rich Rogue near my Michigan home, I have seen midges, caddis, stones, craneflies, and four mayfly species, both duns and spinners, simultaneously. During a multiple hatch such as this, trout usually feed selectively on one of the types.

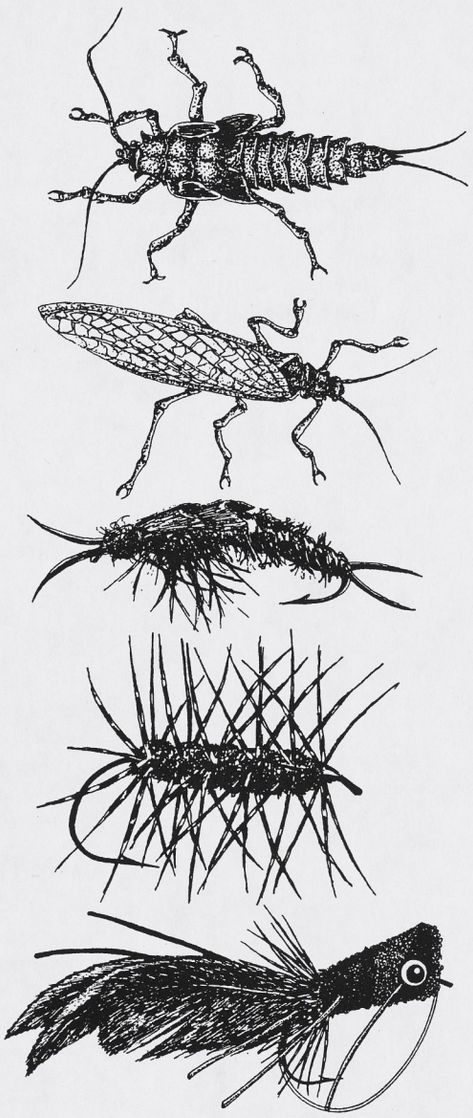
How do we select the right fly? This is a difficult problem even for veteran anglers. The answer is never simple. Experience, knowledge, and close observation are required. A few bits of information should be of help. First, trout usually feed on the insect present in the greatest numbers. Quite often a small fly will be present in company with a large fly but in much greater number; the fish will feed on the smaller fly exclusively, though the inexperienced angler usually tries the larger fly first. Try to decide which natural is most numerous. If a suitable imitation does not work within five minutes, look again and try another. Do not keep casting uselessly with the same pattern.

Next, try to identify the riseform and relate that to a fly type. Trout will rise very quietly and deliberately to insect forms that are smaller and cannot escape, such as medium to small mayfly spinners. The larger and more escape-prone the insect, the more hurried and splashy the rise. Therefore, if you observe that #12 Green Drake duns and #18 *Baetis* spinners are both on the water, and the riseforms are quiet dimples, the obvious choice would be #18 Hen Spinner in the correct color. Conversely, a violent riseform would indicate a #12 Sidewinder Dun to imitate the Green Drake.

At times when no hatch is in progress, and especially just before a hatch, fish will feed on the bottom as the immature insect forms become active prior to hatching. Seine the river and discover which nymphs are the most numerous and more mature (these will have the darkest wing pads). Often, you will find that the fish have a preference for smaller but more numerous forms over the larger but less prevalent species.

These multiple hatches can be mystifying, so don't be discouraged by a few failures. One of the most pleasing aspects of fly fishing is its complexity. I would soon tire of constant success, and multiple hatches certainly ensure against that. However, the practical entomologist will have a fighting chance at a solution to the problem; the uninformed will be all but helpless.

Other Bugs Fish Eat



Trout, bass, panfish, and other freshwater fish often cannot pass up eating aquatic insects. Stonefly nymphs (top) offer a larger morsel than mayfly nymphs. There are various imitations of stonefly nymphs, as well as stonefly adults. The Woolly Worm pattern is one of the best flies, because it can imitate many insects, including stoneflies. It looks alive in the water. Deer-hair bass bugs can imitate large moths, frogs, injured baitfish, even mice. Poppers are one of the most effective summertime flies for bass.

STILL WATERS

I. Characteristics

When fishing still water, anglers fish in depths from the surface down to twenty feet. Water temperature determines fish species. Water should not be warmer than 65 degrees if trout are present. Sometimes in the summer, water temperature can rise to the lower seventies, it is hard on the fish they will slow down their activity. If the water is predominantly warmer than 65 degrees, warm water species will prevail, like bass and pan fish, these species can survive in waters up to 80 degrees. The best feeding temperature for trout is between 48 and 65 degrees. Below 45 degrees, trout barely feed. In deep lakes, you will find trout in the shallow waters of the shoreline after the ice melts. As summer heats up the water, the trout move to deeper cooler water, sometimes out of reach for the fly fisher..

When fishing still water, it is important to always keep a tight line with the rod tip close to the surface of the water. The angler does not have the advantage of moving water to help take up slack and set the hook. The line must be tight, so a hit can be felt and the fly set immediately.

Feeding habits in still water depend on the trout species. Brook and brown trout sit on the bottom and wait for food to swim by, rising up to eat, then returning to their spot. If food is very abundant they will cruise for food. Rainbow trout always cruise whether eating or not. It is important to be able to move around the water to locate fish. Boats or belly boats are handy if the lake is large enough.

II. Where are the Trout?

Look for obstructions, weed beds or edges. Edges include: shorelines (where there is a color change), water temperature layers of fast and slow water. Islands and points can also attract fish. Sometimes they can be found out in open water as well. Look for active risers and try to determine what they are feeding on. Big splashy takes often mean trout are eating insects emerging and flying away. Boiling under the surface often means the trout are taking insects ready to emerge. Look for any streams entering the lake. Streams bring food, cooler water and oxygen to the lake. Stream currents cut long trenches into the bottom of the lake, fish streamers or nymphs through these trenches. Sometimes underwater springs can be present in a lake. You can find them by locating cooler water temperatures.

Brown, Rainbow and Cutthroat trout and landlocked Salmon must spawn in moving water. In the fall, trout will begin to migrate to moving water in preparation for spawning. Brook and Lake trout can spawn in lakes. If no stream is available for spawning, the lake must be planted with trout.

III. Still Water Entomology

There are less dry fly hatches on still water then there are on streams. Most of the food found in still water does not hatch, like baitfish, leeches, scuds, ants and beetles. Of the bugs that hatch, midges, mayflies and damsels are prominent.

IV. Angling Techniques

If fishing dry, your fly will be still or adding an occasional twitch. If wet, your fly must be moving. Still water subsurface insects are always swimming. Try to fish as long a leader

as possible, fish have the opportunity for a long look at your fly. As for leaders, fish as thin as one can, depending on the size of the trout. When presenting the fly, try not to lay the line over fish, they spook easily and run to deeper water. Also, try to determine the direction of travel, that way you can cast and try to lead the fish to your fly. Only fish dry flies to rising fish, otherwise fish wet. Trout in lakes eat many more sub-surface insects then those on top.

When fishing with a nymph, cast in shallow water with a perfectly straight leader. Cast out let it sink, retrieve with a slow twist of the wrist, then a few strips to move the nymph along the bottom, repeat. Two variables play a part in fishing wet, depth and retrieve. Fish nymphs shallow, leaches and streamers deeper using weight when needed. The retrieve is slow for nymphs and faster for leaches and streamers. Leeches and damsel flies are quick swimmers, use a fast retrieve adding quick spurts of speed Another method is to add an 18 inch dropper with a nymph attached to the dry fly.

V. Two Common Insects Found on Still Water in the Greater Yellowstone Area:

Mayfly - Speckle-Wing Quill (Callibaetis)

The nymph is a good swimmer. It lives in weed beds and along the bottom in shallow water. When ready for emergence, the nymph swims to the surface, the skin splits and the dun dries and flies away. The emergence occurs in seconds, which makes for an aggressive take by the trout. The duns fly to vegetation, and in a day or two, they molt to spinners. Males gather in the evening in swarms just above the waters surface. The females fly to them, mate, fly back to vegetation and let the eggs mature before laying them. The hatch occurs early spring and lasts for three to four weeks, then again late June, and again in September. The hatch cycle begins in late morning. Imitations include: nymphs (flashback pheasant tail 12-16, or callibaetis nymphs grey, green or brown 12-16) or dry (speckle wing callibaetis, callibaetis comparadun, callibaetis hairwing dun, tan, grey or olive 12-16 or callibaetis quillspinner in grey or red 12-18).

Damselfly

You will find damselflies in late spring and early summer. They like weeds, the more weeds the more damselflies. Damsels grow to full size in the nymph stage, emerge and mate when adults. They life cycle last one year. When ready to emerge, the nymphs migrate from weed beds to vegetation at or near the shoreline (this is a great opportunity for a trout to feed). The nymphs crawl on vegetation the skin splits and the adult emerges very slowly, it is unable to fly for an hour or more. The emergence usually takes place at dusk or after dark. Adults fly only in still air on sunny days. They eat small surface insects. If windy, damsels might be blown off vegetation onto the water at which time trout eat them readily. The adults live for a few weeks. When fishing with a nymph, let it sink, use a slow retrieve then a faster retrieve then a pause. Cast away from shore and retrieve toward shore. When fishing dry, cast to the shoreline or weeds occasionally using a slow twitch.

<u>Always have on hand:</u> Damsels, dry and nymph size 10-12 green, tan or blue; Mayfly callibaetis, dry and nymph 12-16; Royal Coachman Trude dry size 12, 14; Parachute Adams dry size 14, grey; Caddis, dry and nymph size 12-16; Various attractors like a stimulator size 14; Ants and Beetles; Bead Head Pheasant Tail size 14; Leeches size 8 black and brown; Split shot size B; leader 71/2 ‘ 4x; tippet 4x and 5x

References used:“The Orvis Fly Fishing Guide” by Tom Rosenbauer

“Western Streamside Guide” by Dave Hughes

Color Me!

MONTANA

BROWN
Like a grizzly bear

BLUE
Like the
Madison River

YELLOW
Like a Western
meadowlark

RED
Like a sunset
in the
Big Montana Sky

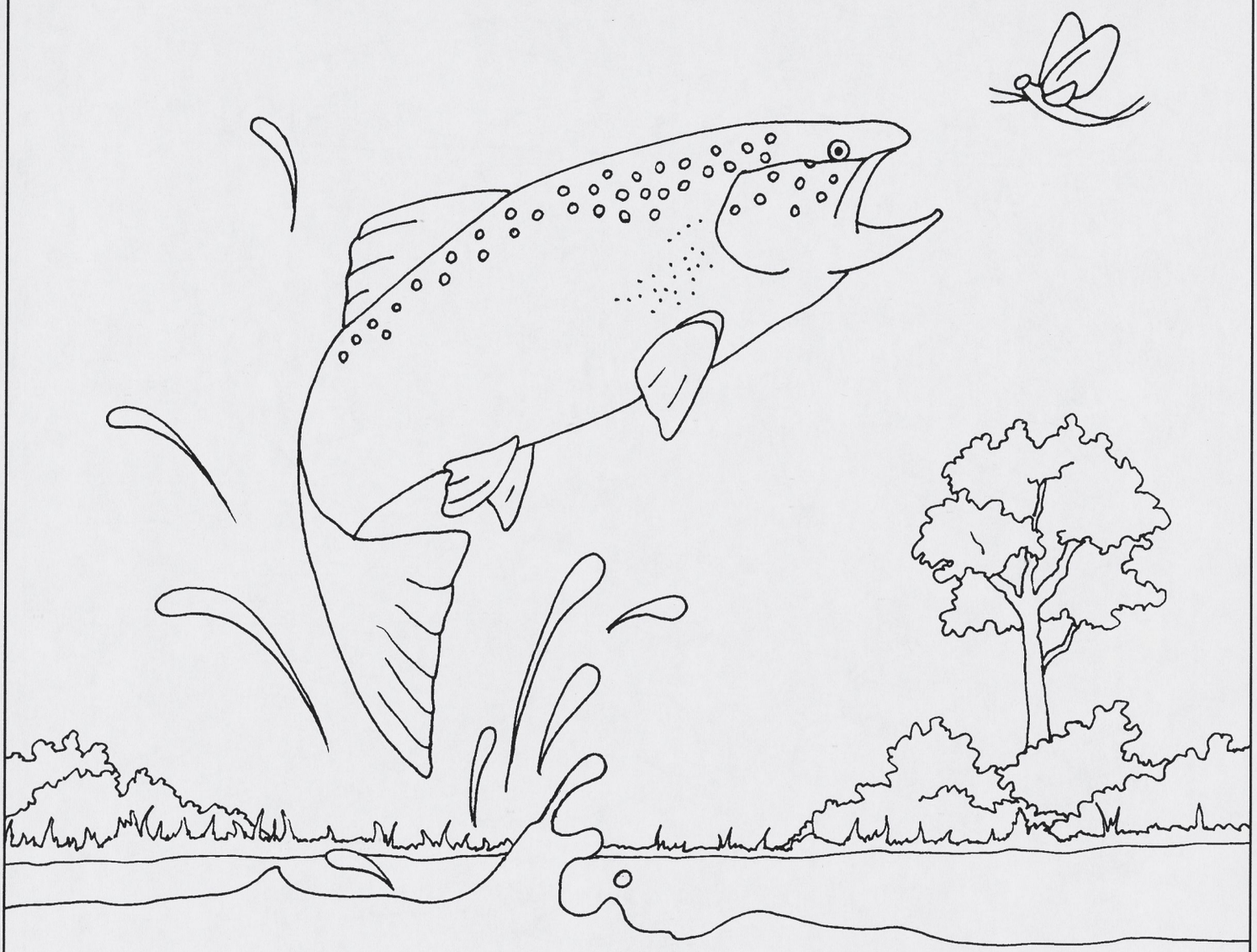
Like a GOLD
wheat field
on the
Great Plains

GREEN
Like the needles on
a Ponderosa pine

PURPLE
Like the hills in a
Charles F. Russell
painting

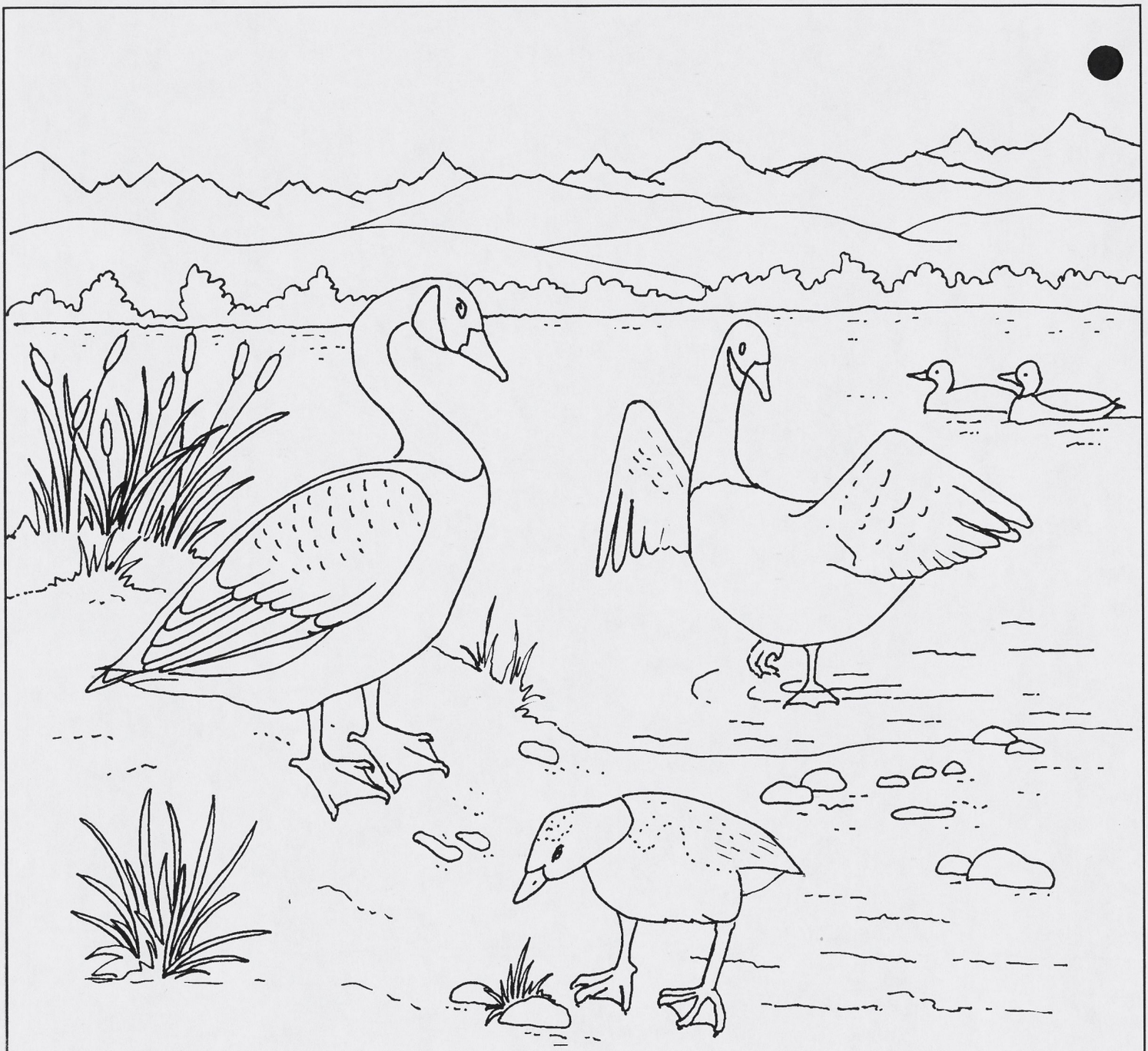
BLACK
Like the spots on a
cutthroat trout

François and Louis de la Vérendrye, French Canadian brothers, were the first known European explorers in Montana. They were looking for new places to hunt for furs.



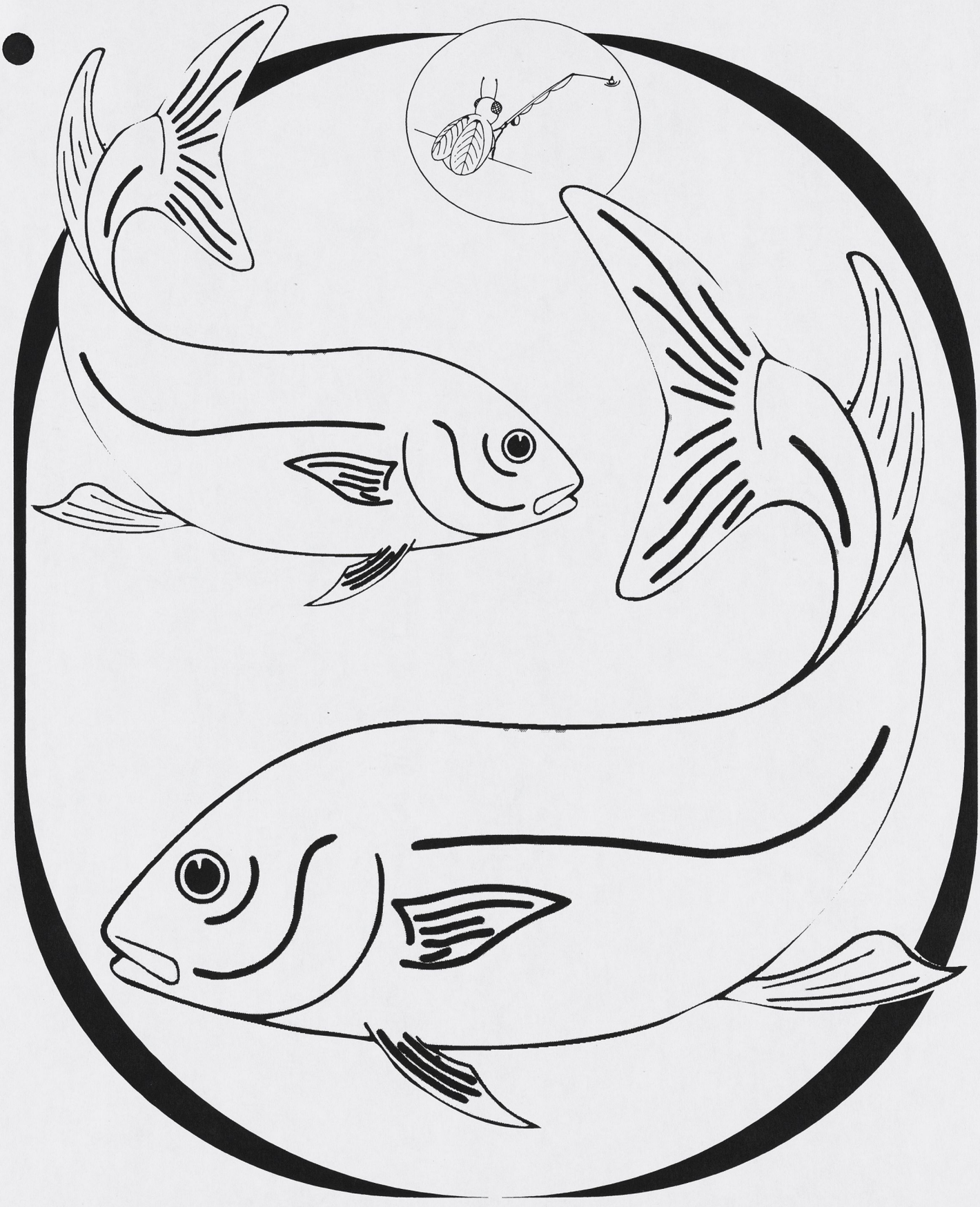
Trout

Trout like the cold waters that come from the melting snow and springs in the mountains. They live on insects that live in the water. Some of these insects eventually swim to the surface and spread their wings. The mayfly in this drawing lives in the air only one day, then falls back to the water and lays its eggs to make a new hatch of insects. Trout can leap out of the water to catch their meal.



Canada Goose

The Canada goose is very abundant in the Rocky Mountains. You might have seen a flock of them flying in a "V" formation. This goose has a black head and neck and a large patch of white on its cheek. Many choose to live near ponds and mountain lakes, but some can be seen in city parks or country fields. Their call is loud, deep, and musical.



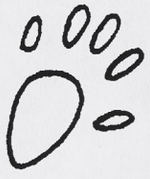
Fly fishing in Montana's sparkling streams is a little bit of Heaven on Earth!

Grant-Kohrs Ranch National Historic Site, near Deer Lodge, was a cattle ranch that once covered more than 1 million acres (0.4 million hectares). Cattle ranching is still big business in Montana.

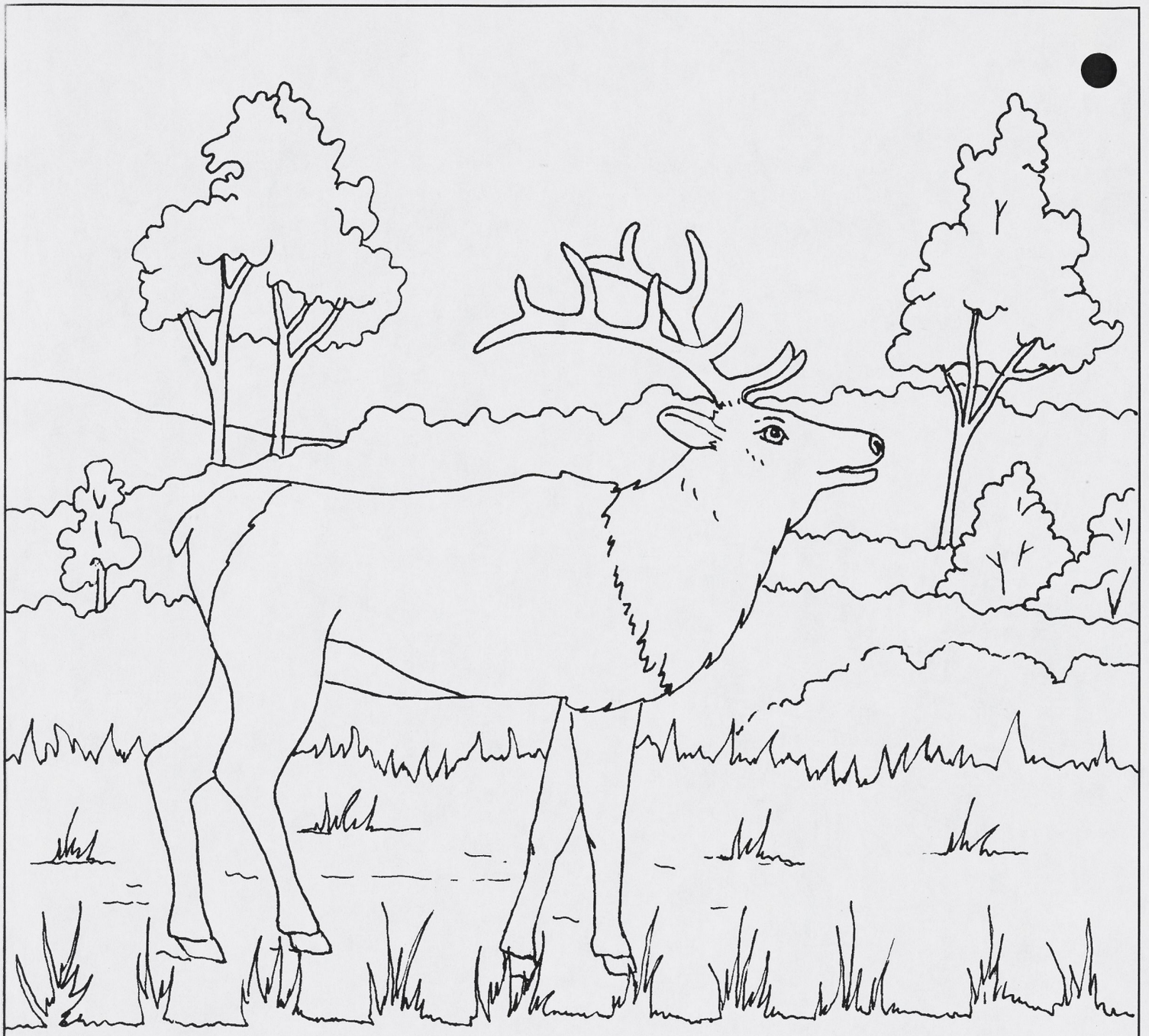
RED-WINGED BLACKBIRD *(Agelaius phoeniceus)*. Male above, others female. Summer: most of Canada and U.S. Year-round: southern half of U.S.

ABOVE: ROBIN *(Turdus migratorius)*. Summer: most of Canada. Year-round: most of U.S. BELOW: WOOD THRUSH *(Hyclocichla mustelina)*. Found in summer in eastern half of U.S.

Who Can This Be?



Make a line starting with number 1 to draw this frisky little creature. The chipmunk is smaller than a squirrel and has a noticeable stripe along its back. The chipmunk is quick on its feet and usually holds its tail straight up when running. It scampers over rocks in search of nuts, berries, leaves, and stems to eat during the winter months. Chipmunks seem friendlier than most wild animals, but remember, they are wild.



Elk

The elk, with its light brown color and dark brown, shaggy hair on its neck, is larger than the deer. Adult males, or bulls as they are called, have large antlers that they use to protect their females from other males. In the fall, you can hear the bull elk bugle. It sounds like a loud musical whistle. Elk gather in large herds and move together to browse for grass to eat.