

Power Shoe-Lacing: More Than Meets the Eyelet

By JANET NELSON

You may have noticed that athletic shoes often have extra holes around the lacing area. Usually there's a single extra hole on each side, but in the new models there may be as many as four or more extra holes.

Most people dismiss these additional holes as mere decoration. But there is an argument for getting use of the holes you paid for. In fact, some shoe experts say extra eyelets represent the vanguard in high-tech sports shoe performance.

"There are lots of people wandering around with narrow heels and they're slipping out of the backs of their shoes," said Joanne Machella, a buyer at Ray Panella's sports store in Plymouth Meeting, Pa. "They don't need to do that if they use the extra eyelets."

Machella advises people with narrow heels to run the laces through the outer eyelets, back into the inner eyelets, across the tongue and then through the loops created on either side. Then tie the lace. The lace won't slip loose and the shoe's fit will be tighter.

Shoe manufacturers view additional eyelets as state-of-the-art ways to custom-fit your shoes. Ryka aerobic shoes, for instance, come with four extra eyelets. According to Laurie Ruddy, public relations manager for the company, the farther from the vamp the eyelet you use, the tighter the fit. Another custom-tightening method is to slip the lace into the second hole and out the fourth, then tighten and tie.

Even with the conventional number and placement of eyelets, there are ways to get a tight fit. Al Olshan, a real-estate developer, learned to tie his shoes in Russia using a method much more complex than that taught in the United States. He insists that with the Russian method, your shoes will stay tighter and never come untied until you want them to.

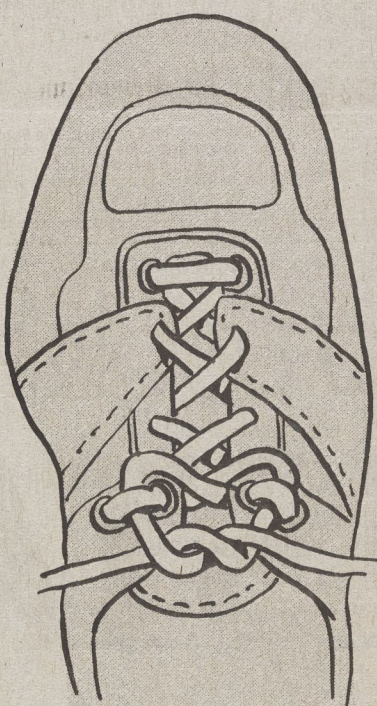
For those interested in being the first on their block to use the Russian technique, Olshan made a poster with his daughter, Susan, illustrating the method. He sells the poster for \$3.93 (Olshan Management, 2627 Paterson Plank Road, North Bergen, N.J. 07047).

"You need the poster in front of you to practice it a few times," Olshan said. "Most people find it tough to get out of an old habit, but it's not really hard to learn the new way."

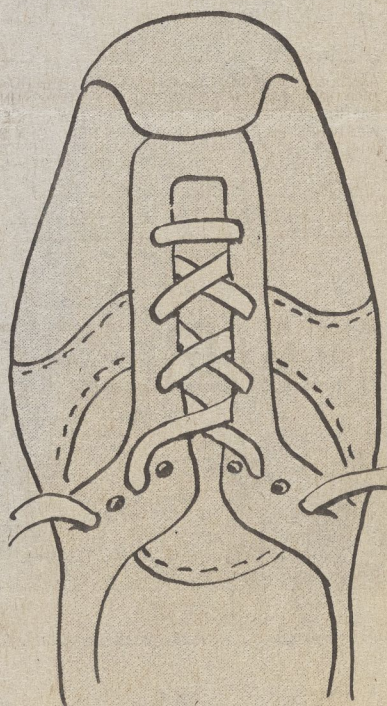
This optimism is not shared by those who have tried to master the Olshan technique. "It's like when you were a kid learning to tie a knot," said Ted Heck, a tennis player from Philadelphia. "The other kids laughed at you if you couldn't tie your own shoes. It brings back the embarrassment of it all."

Paul Elieff, a runner and entrepreneur, seeks to relieve shoe wearers, young and old, from the stress of ever tying their shoes at all. Elieff developed a spring-loaded plastic lace-locking device called Squeezums. "Originally it was intended for triathletes who needed to get in and out of shoes fast," he said. "Then other people began using them on athletic shoes."

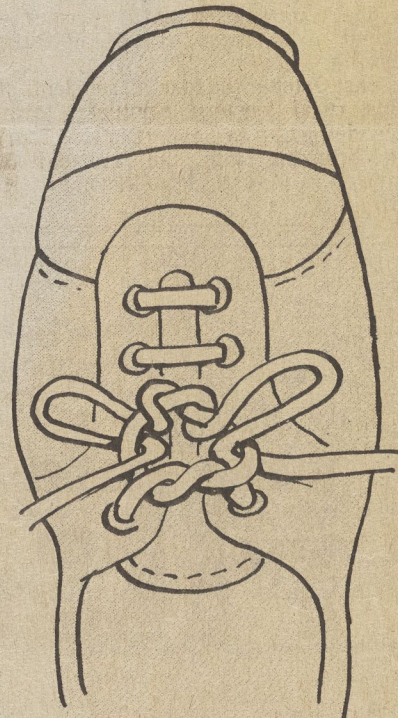
Squeezums are slipped over the



For people with narrow heels: Run the lace ends through the outer eyelets, back into the inner eyelets, across the tongue and through the loops created on either side.



For a custom-fit from the fourth eyelet: Slip the lace into the second hole and out the fourth, then tighten and tie.



The New York Times/Miron Chu

For Russophiles: The final step of a technique imported from the Soviet Union by a New Jersey entrepreneur left one sneaker wearer frazzled.

ends of shoe laces and pulled tight to the shoe. To loosen, they are pushed toward the ends of the laces, but need not be removed from the shoe. They are sold in shoe and sporting-goods stores for \$1 to \$1.50 a pair.

Elieff recently introduced a line of

children's shoes with the Squeezums already attached to the laces. Critics say this may lead to an entire generation of people who will never learn to tie their own shoes.

Heck, the Philadelphia tennis player, finds another problem for

people relying on Squeezums.

"They'll never learn the fine art of the stall," he said. "When you get a little tired in a game like tennis or baseball, there's nothing better than a few moments out to tie your shoe laces."

Watery Treadmill: Swimming Laps in

An engineer from New York has developed a new lap pool for swimmers, which works as a runner's treadmill does. The swimmer strokes in place, moving against an even current. Water in the pool moves as a river does, constantly circulating at a rate of 8,000 gallons a minute, according to James Murdock, the inventor of the Endless Pool. The rate of flow can be adjusted by turning a valve at one end of the 12-foot swim lane.

At the machine's maximum rate, an athlete would have to be able to swim 100 yards in 1 minute 6 seconds to keep up, said Murdock. The recreational swimmer can adjust the rate of flow downward.

Murdock built a prototype of the pool last year for the Columbia University swim teams. "The flow is very constant and even," said Jeff Ward, the women's coach for Columbia, whose swimmers use the pool for rehabilitation and stroke analysis. "It becomes comfortable to swim in very quickly. There is some sense of keeping up, but there is no sense of struggle."

The Endless Pool works on a differ-

ent concept than do pools at swim spas equipped with jet nozzles. Murdock said his device creates less turbulence because the water moves under low pressure rather than in jet streams.

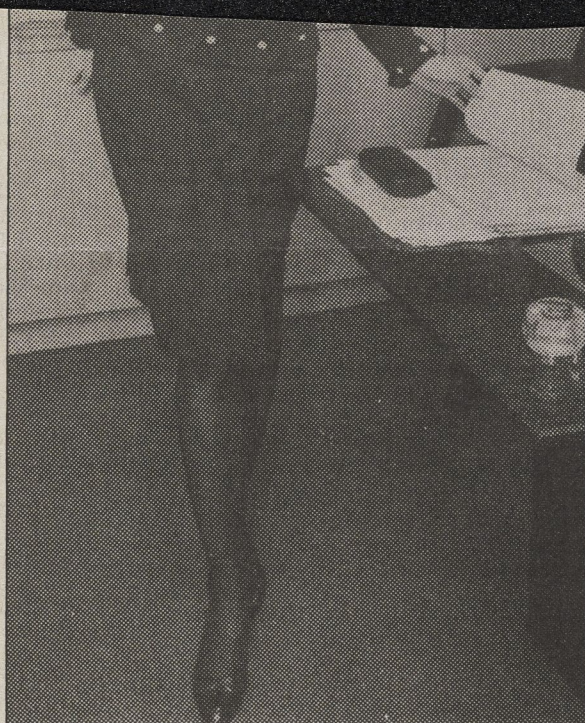
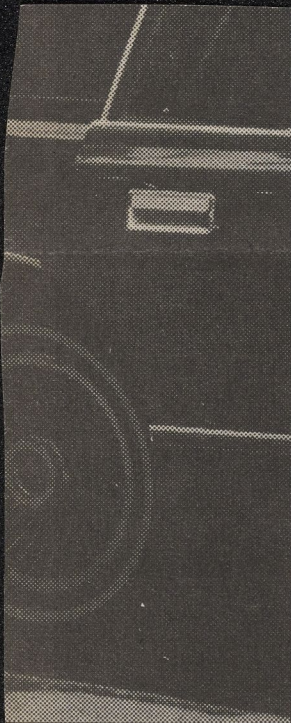
Pool components are made of stainless steel. The swim lane comes with a vinyl liner. A stainless-steel deck, which can be covered in redwood at extra cost, extends the pool space to almost 9 feet wide and 14 feet long. Bolts fasten the system together.

The Endless Pool costs from \$16,000 to \$20,000 installed, depending on the options you choose. Water purification and heating systems also vary the price. For information, telephone Endless Pools at (212) 691-6377.

SwimEx Systems, a company based in Warren, R.I., introduced another version of a low-pressure lap pool two years ago. SwimEx uses a paddle-wheel three feet in diameter to circulate the water through a false bottom and into a fiberglass pool. It sells for about \$20,000 with a water heater and purifier. For further information, telephone SwimEx at (401) 245-1200.

BARBARA LLOYD

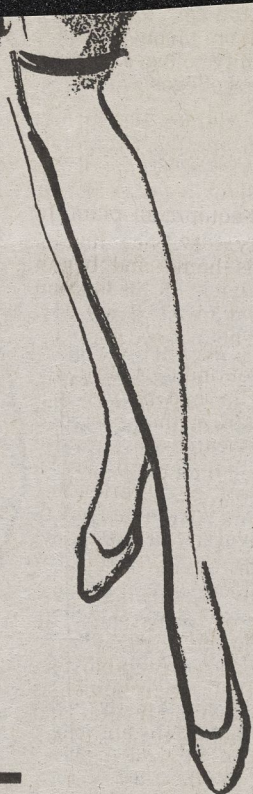




FAR LEFT Plaid coat dress with a velvet collar is \$198 at Ann Taylor.

LEFT Navy-blue crepe dress with brass buttons has pleated panels front and back. By Chanel, it is \$2,545 at Bloomingdale's.

FAR RIGHT Red jersey dress with drop waist and zippered neckline is by Michael Leva; \$280 at Bloomingdale's.



Sketch by Maning

Executives' Toolbags

By DEBORAH HOFMANN

Remember the jokes about the tuna sandwich in the attaché case? These days, the sandwich is chic — wholesome fuel for those with better things to do than indulge at lunchtime — and the attaché case isn't.

For fall, luggage stores around New York City are stocking soft-sided satchels meant to accommodate the changing profile of today's executives and professionals. "There's a gigantic shift from attaché cases to less structured, soft cases, largely to attract the women's market," said David Dinoffer, owner of three Dinoffer leather goods stores (22 West 57th Street in Manhattan, and in Greenwich, Conn., and Scarsdale, N.Y.). The store's soft-sided leather satchels come in many styles, including one in burgundy or black calfskin that starts at \$400.

"Men want big doctor and gym bag styles, and shoulder straps," said James Senn, district manager of Innovation, which has 30 luggage stores in the metropolitan region. "Commuters stuff as much as they can into briefcases," said Mr. Senn, who no-

tices things like this during his daily commutes to Grand Central Terminal. "They pull everything out of there: phones, mini-VCR's, hair rollers, shaving kits." The store is doing well with roomy accordion styles by Renwick in belt, harness and saddle leathers, \$300 to \$500.

"Softness" and "expansiveness" are what shoppers ask for at Bally, said John Balavender, a salesman at the men's store at 645 Madison Avenue (59th Street), where most styles are \$475 to \$550.

Lancel, at 690 Madison Avenue (62d Street), sells soft-sided satchels that are rainproof. In polyurethane-coated canvas or nylon, they cost \$164 to about \$300. Women's styles feature handbag detailing, and most have optional shoulder straps. "Women insist on a shoulder strap, and men are picking up on it," said Paul Spugani, director of sales. "It's hard enough to get around a big city without a hand occupied and a hard suitcase banging against your legs."



Tote and handbag styles are also popular with the women who shop at Cachet, 1159 Second Avenue (61st Street). "My attaché wasn't comfortable," said Meredith Sirna, who recently bought a tote there to lug her clipboard, reports, books, Filofax, billfold, keys, journal, sneakers and workout clothes. The store stocks totes up to three feet long, with or without outer pockets, \$62 to \$112.

Louis Vuitton, never one to miss a trend, sells soft cases in insignia-stamped vinyl or in leather in an anonymous striated finish, \$495 to \$860. "People want softer, lighter cases, so we had to bring in a new species," said Susan Meyer, director of public relations.

For relaxed offices, there are durable — and also ephemeral — alternatives. Il Bisonte, 72 Thompson Street (near Broome Street) has 10 styles of rugged cowhide satchels, \$400 to \$500. New features this season include shoulder straps, larger gussets to allow for shoes and big pockets for chunky daybooks.

The five French Connection stores in Manhattan sell rubber satchels seamed with metal studs, \$30 to \$65.

Tehen, 122 Greene Street (near Prince Street), sells treated cardboard and plastic satchels for \$79; a tartan plastic version of the Hermès bag that Grace Kelly made famous costs \$83. It is made by Access, a Paris company. Carry it with your new fake fur.

The New York Times/Bill Aller



Bridge | Alan Tru

The cornerstone of American bridge is the two-level response.

A survey of the system preferences of serious tournament players would certainly show that the largest group favors "Two Over One," which might be called Modern Standard American. The cornerstone is the two-level response in a suit to guarantee game, with the possible exception of a minimum rebid in the same suit.

The best description of this method is "Two Over One Game Force" by Max Hardy, available for \$14.45, including postage, from the author, P.O. Box 28219, Las Vegas, Nev. 89126. Every aspect is dealt with clearly and competently, and most of the inherent difficulties are addressed. For example, the problem presented by moderate hands with clubs when the opening bid is one diamond is largely solved by the use of a two no-trump response as an invitational bid.

Among the minor bidding devices recommended by Hardy is the "one-under" jump shift shown in the diagram. Three hearts showed a good spade fit with 9-12 points and an unspecified singleton or void. East's five-heart bid, intended as an advance save, helped push North-South into a fair slam contract with just half the points in the deck.

Hardy was South, playing with his wife, Mary, in the quarterfinal of a 1982 Regional Knockout Team Championship in Phoenix. He was slightly surprised to find that the short suit in dummy was hearts rather than a minor.

Hardy ruffed the opening heart lead in dummy, cashed the spade ace and was delighted to see the king appear from West. He drew trumps, taking the marked finesse against the jack, and was in full control. He could not, however, make all the tricks because of the block in clubs. After

NEW YORK (AP) — Long johns just ain't what they used to be. And that's good news for the consumer.

Today there is a wide variety of high-tech replacements for the old scratchy, bulky, shrunken underwear.

Choices range from silk to polypropylene, from trademarked synthetic fabrics like Lifa, Thermax and Capilene to cotton, wool and synthetic blends.

"Underwear is a specialized product today, vs. what it used to be," says Jim Jennings, product manager for Lands' End, a direct mail retailer based in Dodgeville, Wis. "You really have to determine the activity before you buy."

Kevin Sweeney of Patagonia, a sportswear manufacturer in Ventura, Calif., agrees. "People used to say, underwear is underwear. But then we said, why don't we make it perform? And then we said, why don't we make it fun?"

Sweeney defines fun as thermals in such untraditional colors as neon orange with navy trim, or emerald with purple trim.

Thermal underwear used to be made of 100 percent cotton, with a small amount made of 100 percent wool, says Tom Armstrong, product research and testing manager for L.L. Bean in Freeport, Maine.

But an explosion of synthetic fabrics changed that situation for the better about 10 years ago, he says.

"There has been a trend toward more man-

LONG JOHNS

Choosing the right underwear today requires careful study

made fibers," says Bob Blanchard, president of National Knitwear Manufacturers Association in Morristown, N.J., which tracks national wholesale thermal sales.

"It is now well over half the market, where 10 years ago it would have been at least 80 percent all cotton."

"Cotton alone is useless in a really cold environment," says Armstrong, who oversees a textile lab as well as 400 field testers around the world. "Its high absorbency is its downfall. In essence, it freezes if you stop in winter."

"Wool is great. The old expeditions to the Arctic or the Himalayas relied on wool. But some people

find them itchy, and they don't dry out very well."

What thermal underwear a person chooses today depends on what they do and how cold it's going to get around them.

For cross-country skiers, lumberjacks and backpackers — or anyone who will work up a sweat in the cold — Armstrong recommends polypropylene, because of its ability to wick moisture away from the body, keeping wearers warm and dry.

But ice fishers, stadium fans, vendors and some hunters — or anyone who spends several hours still in the cold — should get heavier, double-ply cotton-wool-synthetic blended thermals, Armstrong says.

Even sports names like Nike and Patagonia have entered the previously unglamorous field.

People who want to wear the same thermals as space shuttle astronauts can choose Capilene underwear by Patagonia, in three different weights. Nike also offers three different weights of thermals in its All Conditions Gear line.

But what weight to choose?

"If you're standing still in the cold — like a ski race judge — buy expedition-weight," Sweeney says. "If you're cross-country skiing, buy mid-weight."

"If you're wearing it under your clothes, buy lightweight."

Those who do a variety of outdoor activities are a retailer's dream.

"If you are both passive and active, you can't use just one set of underwear," Jennings says.

In the natural fibers, silk is now king, chosen for its soft, light texture.

"Silk is the top-of-the-line," Jennings says.

"People use it to sleep in, for layering, anywhere you don't want to be encumbered."

If the bulk and itch of earlier thermals are gone, what about the tight fit? It seems that shrinkage problems may be a thing of the past as well.

"Normal shrinkage is 5 percent to 7 percent," Armstrong says. "But we build in that size buffer. If you put it on right from the box it would be a little big. Our people fit the garment so it fits correctly after washing."

CHICAGO (AP) — A program aimed at bringing the peregrine falcon back from the brink of extinction in Illinois has reached its goal a decade earlier than expected, the project director said Monday.

When the Chicago Peregrine release program ends this summer, 6 of the crow-sized birds of prey will have been reintroduced into Illinois, said director Vicki Byre.

Before the program began in 1986, peregrines had not been seen in Illinois for 35 years, wiped out by pesticides that damaged their ability to reproduce, Ms. Byre said in a telephone interview.

"By the end of 1960s, peregrines were entirely extinct east of the Rocky Mountains," she said.

But with the help of projects nationwide, there are now likely more than 100 breeding pairs east of the Rockies — and probably more than that west of the Rockies, she said. Peregrines in the western United States have fared better

because there is less cropland — and thus less pesticide use, Ms. Byre said.

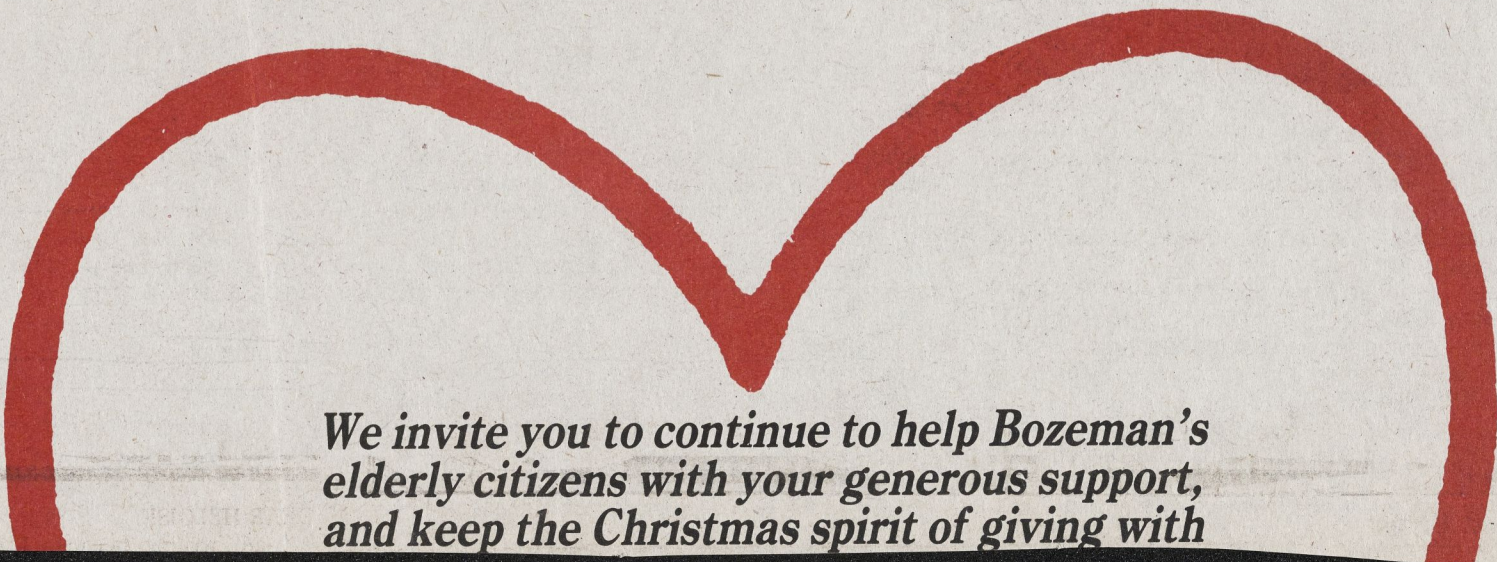
"It's because of man that they have disappeared so I think we owe it to our fellow living creatures to help them back," she said.

Changes have been made since the near-demise of the peregrine, nature's fastest bird and known for making spectacular swoops at 200 mph to catch its prey — smaller birds — in flight.

The pesticide DDT was banned in this country in 1972, and the federal government declared the falcon an endangered species the following year.

The peregrine's natural habitat — mostly wide open cliffs — also has changed. Places where it once roosted have been populated with homes, trees, and the falcon's most deadly predator — the great horned owl, said Carl Becker, chief of the Illinois Department of Conservation's Division of Natural Heritage.

A WILDLIFE CHRISTMAS



We invite you to continue to help Bozeman's elderly citizens with your generous support, and keep the Christmas spirit of giving with

Hunters gunning goats



The New York Times/Lee Dodds

Yolanda Ybarra preparing some of the tens of thousands of tamales sold at the family shop in Brownsville, Tex.

Computer Security Shift Is Approved by Senate

By LINDA GREENHOUSE

Special to The New York Times

WASHINGTON, Dec. 23 — As one of its final acts before adjourning, the Senate has passed and sent to President Reagan a bill to restore civilian control over the standards for safeguarding information stored in the nation's computers.

Mr. Reagan is expected to sign the bill, the Computer Security Act of 1987. The measure, a product of extensive bipartisan negotiations and compromise, was approved unanimously by the House in June, shortly after the White House dropped its opposition. The Senate approved it by a unanimous voice vote late Monday.

The bill repudiates a policy the Reagan Administration established by executive order in September 1984, giving the Defense Department and the National Security Agency authority to set security standards for information contained in Federal and private computerized files anywhere in the country.

The military's authority extended not only to classified national security information but also to unclassified information regarded as "sensitive."

Piecing Together Knowledge

At the time the Administration said its policy was required by the threat to national security posed by the growth of computerized information services, from which it said sophisticated users could piece together important knowledge even from unclassified material.

The Administration's main concern was the broad range of technical and scientific information available in Government and commercial computers.

Donald Latham, an Assistant Secretary of Defense, testified before a House committee in 1985 that "virtually every aspect of Government and private information is readily available to our adversaries." He said that "unfriendly governments and international terrorist organizations are finding easy pickings" from what he called a flood of unprotected information.

Under the Carter Administration, the Pentagon had been in charge of standards for safeguarding classified information. The Commerce Department held responsibility for the security of other computerized Government information.

The Reagan order set off alarms both in Congress and in industries that make heavy use of computers, including banking and the rapidly growing industry that markets computerized data bases to private subscribers. Government intelligence agencies began visiting private companies to request information about who was using their systems.

The alarm grew last year when Rear Adm. John M. Poindexter, then the President's national security adviser, issued a further order that broadened the definition of "unclassified sensitive" information to which the Defense Department could control access. The Administration rescinded that directive after strong Congressional criticism earlier this year.

The Computer Security Act places responsibility for the Federal Government's computer security policy with the National Bureau of Standards, an

The bill reverses Reagan's order giving control to the military.

agency of the Commerce Department. The Defense Department will retain authority only over classified national security information. The bill provides that Federal agencies do not have authority to monitor or control the use of unclassified computerized information in the private sector.

Training Computer Operators

Under the bill, the National Bureau of Standards is to develop Governmentwide standards for protecting the security of information in Federal computers and to assist the private sector in developing its own standards.

In addition, the Bureau of Standards will develop programs to train operators of Federal computers in computer security techniques.

Senator Patrick J. Leahy, a Vermont Democrat who was one of the bill's sponsors, called it "a significant act of Congress that reflects the promulgation of information policy by executive fiat." In a statement in The Congressional Record, Senator Leahy said the Reagan order was a "dramatic shift in the management of Government information protection from civilian authority to military authority."

The bill's other principle sponsors were Senator Lawton Chiles, Democrat of Florida; Representative Jack Brooks, Democrat of Texas, and Representative Dan Glickman, Democrat of Kansas.

The Senate Democratic leader, Robert C. Byrd of West Virginia, called the bill up for action a few minutes before midnight Monday, as the Senate was awaiting House action on the spending and deficit-reducing bills that Congress needed to pass before it could adjourn for the year.

A report on the bill prepared by the House Committee on Government Operations expressed the Congressional mistrust of relying on the military to set the Government's information policy.

Referring to the Department of Defense, the report said: "Since it is a natural tendency of D.O.D. to restrict access to information through the classification process, it would be almost impossible for the Department to strike an objective balance between the need to safeguard information and the need to maintain the free exchange of information."

An unusual coalition of industrial and civil liberties interests, including the American Bankers Association and the

assortment of machines, pots and pans to mash, grind, cook, and fill the tamales according to a carefully calibrated production schedule designed to churn out about 500 dozen a day.

Customers generally place their orders well in advance, and as Christmas nears, they come to pick them up, frozen for re-heating later, at a designated time in much the same way as they might make a dentist's appointment.

Over the years, Ybarra's has accumulated more than its share of famous customers. Nelson Rockefeller used to be a regular during hunting trips to South Texas, and his picture still hangs on the wall near an invitation to Richard Nixon's Inaugural Ball. Senator Lloyd Bentsen of Texas, former Senator John G. Tower and local moguls like the owners of the

King Ranch have all been regular customers.

But most of the faithful are either local residents who have been coming for years or vacationers from the North or Midwest who stock up before heading home.

"Everybody sells tamales, but if you want the really best tamales you come to Ybarra's," said David Gaytan, who came here to pick up 28 dozen tamales, some for himself and some to ship in a cooler to his daughter in Austin.

Still, tamale-mania has its limits. After the Christmas Eve rush finally ends, Mr. Ybarra and his family will wearily observe both the Christmas holiday and his 53d birthday.

"We'll probably celebrate," he said, "but we won't eat tamales, that's for darn sure."

King for Compassion as Well as Shelter

that the city's count of 6,000 homeless children is not accurate and that many others are unaccounted for.

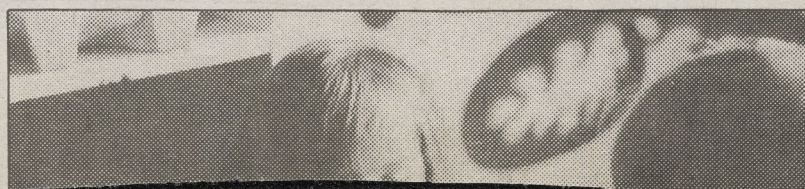
Tim Heger of the National Coalition for the Homeless in Washington said of homeless children around the nation: "These kids are lucky to get food, let alone social programs aimed at bringing them back to any sort of self-esteem."

A joint study of homeless in eight cities conducted last year by Travelers Aid and the Child Welfare League of America found 331 children traveling with 163 families. The average age of the children was 6 years; 10 percent of those not only needed health care but were suspected of being abused or neglected.

'Depressed and Preoccupied'

Children who sleep in cars or under bridges usually do not go to school because they do not stay in one place long enough. In Salt Lake City a Travelers Aid shelter has a school for such children. Marilyn Treshow, a teacher there, said the children are often difficult to teach.

"They're depressed and preoccupied by emotion," she said. "They can't forget their parents' problems so it's difficult for them to concentrate. What they



Personal Health | Jane E. Brody

Strategies and tactics in making intelligent choices for attire in the winter.

When a semitropical animal chooses to live in a cold climate, keeping warm is a primary concern. We are such animals, but when it comes to protecting our relatively hairless bodies against the onslaught of frigid winter air and winds, we often don't do as well as less intelligent animals.

Too often fashion rather than good sense dictates outdoor attire. Witness the woman in a miniskirt and minicoat with just stockings on her legs, or the college student in down vest but with bare head and hands and only thin blue jeans on his legs.

Then there are the overdressed — those who wear heavy clothing to stay warm on the way to work or class but then sweater for hours each day in overheated offices and rooms. Or the small children sent out to play bundled to the teeth who get hot and sweaty while running around in clothing they can't take off.

Even those who try to make intelligent choices about winter attire are often confused by conflicting information and advice. Should they opt for an expensive, thick down jacket or will the less costly Hollowfil II or less bulky Thinsulate do the trick? Should socks be made of cotton, wool or polypropylene? Should outerwear be waterproof or water-repellent?

Admittedly, it's not easy to dress appropriately for all one's daily activities, as anyone who has been shopping in overheated stores knows. Different people tend to dress for different parts of the day. Some base their attire on the outdoor weather, others on the anticipated temperature at work, others on the climate in transit and still others on how cold their bedrooms are when they're getting dressed. Chances are, at one point or another in their day, all will be uncomfortably warm or cold.

But experts who devote their lives to analyzing natural and synthetic fabrics and studying how people dress can help you make wiser choices. While they cannot guarantee 24-hour-a-day comfort, their tips can help reduce the time in which you find yourself too hot or too cold.

Weather: Out and In

Anyone who listens to weather reports realizes it's not enough simply to know how cold it is. The air temperature combined with the wind, the wind chill factor, yields an effective temperature that may be much colder than the still air. You'd feel equally cold on a calm 10-degree day as on a 40-degree day with a 40-mile-an-hour wind. Or, to use a more realistic winter example, 20 degrees with a 10-mile-an-hour wind feels no colder than 30 degrees with a wind of 20 miles an hour; both produce an effective temperature of 4 degrees.

Indoors there is usually no wind to worry about, although drafts from poorly sealed windows and doors can cause discomfort. For areas where you can control the temperature, some experts say it is better for mental functioning, upper respiratory health and your finances to keep the thermostat set at around 65 degrees. However studies at Kansas State University in Manhattan, Kan., reveal that for a woman who is sitting still to be comfortable at that temperature, she must wear long underwear under slacks, socks and boots, a heavy blouse, vest and jacket. Men, who naturally feel warmer than women because their metabolic rate is higher, have an easier time being comfortable and fashionable in an office at that temperature if they dress in heavy three-piece suits.

Your Activity Level

Body movement generates heat. A simple increase in muscle tone, which

Men naturally feel warmer than women because their metabolism is faster.

you might feel as a tightening around the neck and shoulders, can double your body's heat production by doubling the metabolic rate. Shivering, the body's natural response when the core temperature begins to drop, increases heat production fivefold. And vigorous exercise can produce a tenfold increase in body heat.

Studies for the Canadian National Research Council showed that the amount of clothing needed to keep you comfortably warm when you're sitting still in a 70-degree room would also keep you warm at 40 degrees if you're walking briskly or at five degrees below zero if you're running. It should be obvious that if your day demands varying levels of activity — say, you take a bus to work, sit quietly in an overheated office all day and then walk briskly home in the evening — you'll need to wear layers of clothing that you can don or remove as you move from one activity to another.

Children who live in cold places are often sent to school and out to play in clothing that is far too heavy and

can't be removed when the child gets hot. Experts recommend that children be dressed in layers, starting with a "core ensemble" of lightweight jeans (or dress), a medium-weight short-sleeved shirt, ankle socks and sneakers. Add a sweater, vest or sweatshirt that the child can remove in class if it's hot. Top it all with a windproof parka, ski pants, snugly fitting hat or hood, lined mittens and, in snowy or wet areas, waterproof boots.

Fabrics and Use

There are four main secrets to winter warmth, according to Dr. Elizabeth McCullough of Kansas State. Create a "blanket" of air close to your body, trap it there by keeping the wind out, cover your body from head to toe as evenly as possible to close off all escape routes for body heat and let body moisture escape but keep outside moisture out.

Despite competitive advertising, Dr. McCullough said, her extensive studies using temperature-sensitive manikins as well as people revealed that the choice of fabric is less important than how it is worn. "The warmth depends on thickness, and all the fabrics, both natural and synthetic, come in varying thicknesses, so you cannot generalize by type or brand name," she explained. The ideal is a fabric that traps a lot of air. Down, loosely woven bulky wool or acrylic, Hollowfil, PolarGuard and

Secrets of Keeping Warm

Create a "blanket" of warm air close to your body. For example, use layers of clothing that trap air.

Cover body evenly to close off all escape routes for body heat. Wear a hat, mittens and boots; don't leave legs bare.

Keep wind and moisture out while letting body moisture escape.



D. F. Bach

Thinsulate all meet this criterion. In Hollowfil, for example, the individual fibers are hollow (as are the hairs of a reindeer's coat); in Thinsulate, microfine fibers trap a lot of air, resulting in warmth with a minimum of bulk. The same effect can be achieved by wearing several layers of airy fabrics, such as bulky wool sweaters, which has the advantage of allowing you to remove or add layers as circumstances change.

"The insulating differences between fabrics nearly disappear the way they are usually worn," she reported. "Unless the garment totally covers the body, you may not appreciate differences in insulating value." Design of the garment, she insisted, is more important than the kind of fabric. The body should be uniformly covered for maximum warmth. It makes no sense to pile layer upon layer on one's torso and wear nothing but stockings or thin pants on one's legs. Hands should be covered by mittens (tight gloves are of little value because they trap no air) and feet should be enclosed in thick, loose-fitting, lined boots that can accommodate thick socks. You should wear a hat; if your entire body is covered but your head is bare, 90 percent of your heat loss will be through your head.

To keep out wind and weather, an outer shell of leather, tightly woven nylon or canvas or some of the new fabrics like Gore-Tex are effective. Most also allow body moisture to escape. The outer shell should be able to be sealed against the wind; that means tight closings at the cuffs, neck and hips (or, in the case of pants, waist and ankles) and zippered front closing that can be opened if you get too warm.

Second Skins

PART I

The warmest? The driest? The quietest? Extensive field-testing revealed the best new clothing for sportsmen. by Ted Kerasote

A red Toyota turned into the snow-covered field and stopped before our blind. The husky guide behind the wheel said, "Come on! Geese are pouring into my spread."

We gathered our packs and guns, piled into his Land Cruiser, and, when we hit the road, drove quickly across the countryside that borders Chesapeake Bay. Within minutes, we were hiking through the snow and water to another blind, where geese, pushed by the wind, banked over the trees and into our decoys. Dark clouds soon came off the bay, followed by big flakes of snow.

"It's getting cold," the guide mentioned.

Feeling comfortable, I gave him a quizzical look.

"I got sweaty," he said, "walking over."

When we began to discuss what we wore beneath our parkas, the guide, who knew a lot about gear, confessed that he was wearing cotton underwear. My friend and I had on underwear made of synthetic fibers; both of us were perfectly dry.

This example is but one of many that might be cited to demonstrate the advantages of using synthetic fiber clothing in cold and wet environments. Here's another, more controlled test, which I undertook last elk hunting season. On alternate days I wore wool knickers and those made from a polypropylene/Lycra blend. I hiked through knee- and thigh-deep snow in the southern Absaroka Mountains of Wyoming, in temperatures ranging from 2° to 30°F. My object was not only to see how natural fiber clothing compared to that made from synthetic fibers, but to wear other garments that have been developed since I last wrote a major essay on clothing ("Revolution in Cold Weather Clothing," *Sports Afield*, September 1983).

There wasn't much contest. The wool knickers got wet quickly and remained damp for hours, even if I stayed out of the snow. The polypro/Lycra knickers dried as I wore them and, when I left the snow, were dry within 30 minutes. I found similar results when I compared underwear, shirts, socks and outer clothing

made from natural and synthetic fibers.

In the past, many synthetic fibers were used only in clothing designed for runners, skiers, climbers and kayakers. Today, manufacturers are applying these new fabrics to clothing made specially for hunters, fishermen and backpackers. From underwear to overgarments to shells, this clothing provides what other mammals have had from the start—a warm, dry and, in some cases, quiet second skin.

Here, I'll discuss garments that are useful in a wide range of activities and which, when used in layers, can keep a person comfortable from a marsh to a mountaintop. Starting with underwear, we'll proceed to thicker insulations such as pile pants and jackets. Next month we'll look at shells that can keep these insulations dry without soaking the wearer in his own perspiration, as well as specialized parkas designed for waterfowl and big-game hunting.

At the end of each part is a list of manufacturers. When garments can't be found in your local sporting goods store, they can be ordered directly from the producer.

UNDERWEAR

The layer closest to our skin is the key to keeping us warm and dry during cold weather. Its task is twofold. First, it must provide insulation suitable to our activity level. (Too thick underwear worn while we're moving causes us to overheat and sweat. Too thin underwear worn while we sit leaves us cold.) Second, underwear must transport moisture away from the skin so it can dissipate into the atmosphere. If underwear can't effectively dissipate moisture, we become damp and even soaked in perspiration.

Wool and cotton underwear will convey sweat from the wearer to the atmosphere. As they perform this task, however, their individual fibers absorb moisture. These types of underwear become wetter and heavier as one continues to exercise, and take a long time to dry when one stops. The beauty of synthetic fiber underwear—be it Capilene, Thermolactyl, Lifa or Thermax—is that it is essentially *hydrophobic*. Literally, the word means "water fearful" or, more to the point of our issue, "almost waterproof." In

Originally designed for cross-country skiers and mountaineers, synthetic fiber clothing is now made for hunters and fishermen.

practice this quality ensures that the individual fibers of the underwear absorb little moisture, though water can collect in the interstices between the fibers. It is the individual knit pattern of the various underwears, plus the treatments given each of them, that determines how well they will dissipate water vapor.

Needless to say, manufacturers have done studies that prove their construction and treatments result in the warmest and driest underwear.

To give an example of the contrary information that has arisen, L.L. Bean conducted a lengthy series of laboratory and field tests that led its management to choose Lifa as the underwear to be carried under their company banner. At a similar time, *Backpacker Magazine* conducted exhaustive tests which concluded that Capilene was the more efficient product.

How can this be? Part of it comes from citing tests that compare apples to bananas. In some cases Observer A tests lightweight underwear and comes up with one result. Observer B tests an underwear that is labeled "lightweight" but whose fibers are knitted in a tighter pattern. His tests produce a different result, and the two results are compared by an independent party (e.g., a writer), who doesn't consider all the possible variables.

In addition, these tests have occasionally tried to analyze such criteria as feel against the skin, retention of body odors and launderability, all of which are highly subjective factors. If you doubt this, consider that to conduct a truly scientific laundering study you would have to make certain that all the garments were worn for an equally long period, under the same conditions, by people whose body oils had relatively the same chemical composition, and that you would also have to take into account the hardness or softness of the water, the type of washer and drier used, and the exact temperature of the laundering and rinsing water, as well as the drying temperature and humidity of the air. One tester's 25 washings may equal 10 of another's.

I've gone through this discussion to emphasize what I consider an underemphasized point: Testing outdoor gear and clothing can



The still-hunter needs quiet clothing that sheds water, dissipates sweat.

rarely be so clear as pitting one race car against another, having them accelerate to 60 mph, and determining which is faster. Often, numbers aren't that important in evaluating outdoor clothing. As in the following case, they don't tell the whole story.

If Underwear A dries in six minutes and Underwear B in five minutes, that means B is the better garment, right? But if you take into account that A has a zippered turtleneck—which can be used to ventilate yourself when you're exercising and to muffle your throat when you're sitting—and B does not, the one-minute edge Underwear B enjoys won't really be noticed by you. Other factors being equal, Garment A—slower in the lab test—will be more

*The layer closest
to our skin plays the
key role in keeping
us warm and dry
during cold weather.*

comfortable in the field.

In my experience, which in preparation for this article included 18 months of testing garments all over the world, I've seen these sorts of examples arise repeatedly. In fact, when comparing lightweight underwear of one brand to that of another brand, I've noticed only slight differences in how they dissipate moisture—what might be called their “vapor transport effectiveness.”

This is so because most lightweight underwears, no matter what their particular chemical composition, have a fabric construction that is rather open. Their yarns are joined in a loose grid, through which one's body heat can push a great deal of water vapor. Hence, at least in lightweight versions, many of these underwears perform similarly if we look solely at vapor transport effectiveness. While exercising heavily, I have stayed about as dry in Patagonia's lightweight Capilene as I have in Helly-Hansen's Lifa polypropylene as I have in Duofold's Thermax as I have in Damart's Rib Knit. (Once again, I say “about” because temperature, humidity and my own tempo of exercise weren't perfectly equal each time I donned another pair of underwear to test.)

When you begin to compare the other criteria mentioned above—feel against the skin, how easily the underwear can be laundered, and how it retains odors—you'll begin to notice differences in performance. I shall address these criteria below. To avoid confusion (since several manufacturers use the same raw fabric to make different styles of underwear), I shall list underwear fabrics in **Bold Italics**. Manufacturers will appear under **Bold Headings**.

Capilene, which is produced by **Patagonia**, is a polyester whose individual fibers have had their surface chemically altered to make them hydrophilic, or more colloquially, “water-loving.” Water cannot enter the fibers, but can migrate along the surface in a spreading action. The water molecules move from wet areas to dry

ones and, spread over a greater area, dissipate more quickly. Anyone who has swabbed puddles across a boat's deck to make them evaporate faster can appreciate how spreading action works.

This is an important consideration in drying Patagonia's heavyweight underwear, which has a thick, tight construction that can inhibit the evaporation of perspiration by means of straight vapor transmission through the weave.

Another hallmark of **Capilene** underwear is that it retains little body odor, sharing this honor with **Damart Thermolactyl** and, to a lesser extent, **Thermax**. This has little to do with an underwear's performance in the field but is an esthetic consideration if you are out for more than a few days. **Capilene** can also be laundered in hot water and dried in a hot drier. **Polypropylene** underwears, by comparison, will melt if put in a hot drier.

Capilene comes in three varieties: lightweight, midweight and expedition weight. The latter is a fine choice for anyone who moves slowly or sits for extended periods in cold weather. In addition, the tops of all the underwear sets are offered in zippered turtlenecks.

Damart Thermolactyl, made of 85 percent Vinyon and 15 percent acrylic, comes in more styles and varieties than any other long underwear. (Damart also offers tall and extra sizes, which are sometimes difficult to find in other underwear lines.) Vinyon is the generic name for a vinyl chloride derivative called chlorofibre, which, like polyester and polypropylene, retains its insulative properties when wet while also dissipating moisture quickly. Odor retention, as mentioned above, is minimal, and vapor transport in the lightweight Rib Knit models is comparable to that of other lightweight synthetic underwears. The expedition-weight model, Double Force, is a bit thinner than expedition-weight **Capilene**—it's slightly less insulative but dries a hair quicker. **Thermolactyl** underwear cannot be dried in a hot drier, but can be placed in one set at the “cool” or “air” cycle.

Duofold: This 80-year-old firm, outfitting many of us since our youth, now offers—in addition to its regular line of longjohns—a synthetic underwear made from **Thermax**, a polyester fabric created by Du Pont. **Thermax** has a hollow air shaft through each fiber and feels soft and fluffy. When compared to other synthetic underwear of equal thickness, it seems to be modestly more insulative.

Duofold offers three styles. The first, a two-layer, expedition-weight underwear, unites an inner **Thermax** layer with a 100 percent wool layer. It's very warm and suitable for those whose sports require lots of sitting. The midweight variety bonds an inner **Thermax** layer with a 45 percent wool/55 percent polyester outer layer. It's designed for those who will be slightly more active. The third underwear set—lightweight, 100 percent **Thermax** tops and bottoms—transports moisture rapidly because of its open construction and dries quickly because of its totally

(Continued on page 108)



Four first-rate autoloading rifles include (from top to bottom): Browning BAR; Ruger Mini Thirty; Heckler & Koch HK 940; and the Remington Model Four.

DOGS & KENNELS

LABRADOR

Bigstone Kennels, breeders of 12 Field Champions, including 1962 National Retriever Champion Bigstone Hope, offer puppies with the background to become Field Champions or Gun Dogs supreme. Puppies that will naturally retrieve from land or water at 2 to 3 mo. AKC reg. Safe delivery & satisfaction guaranteed. Air shipment to your nearest airport. Get your order in now for early delivery. Correspondence invited. Write or call. Telephone 612-265-6379 FREE INFORMATION.

BILL ROOK

Beardsley, Minn. 56211

TREBORWOLF

• Deutsch Drahthaars, imported from Germany's best kennels • Versatile Dogs; early natural pointing, retrieving, tracking instincts • Possess unbelievable desire to hunt: Upland game/ Waterfowl / Rabbit / Coon / Cat / Bear • UNSURPASSED GUARANTEE • Visa/MasterCard



KENNEL "VOM TREBORWOLF"
Discriminate Breeding towards Ultimate Gun Dogs
8400 Hill Road • Boise, ID 83703 • 1-800-BOB-WEST

GAME BREEDING

HOW TO GROW GAMEBIRDS FOR FUN, FOOD & PROFIT



START WITH LOW COST, FULLY
AUTOMATIC INCUBATING EQUIP-
MENT AND EGGS 24 PAGE CAT-
ALOG WITH DETAILED "HOW TO"
INFO Ph. (912) 236-0651 OR WRITE
G.Q.F. MFG. CO. DEPT.-S
P.O. BOX 1552 SAVANNAH, GA 31498



Attract Wildlife

DUCKS, GEESE, DEER,
PHEASANTS, QUAIL
Send \$2.00 for informative
33-page booklet.
Naturalists & Consultants - Over 75 Years
Ph. (414) 685-2929 or 1 (800) 558-8815 (For Orders Only)
KESTER'S WILD GAME FOOD NURSERIES, INC.
P. O. BOX V - h Omro, WI 54963

4TH ANNUAL MINIATURE HORSE AUCTION DELL TERA MINIATURE HORSE FARM



All ages, colors, and
varieties. Come place a bid!
• FREE BARBEQUE •
For more information, call
(803) 472-9788



SEE MIRACLE OF BIRTH

**\$12.98 POST PAID WITH
FOUR QUAIL EGGS**

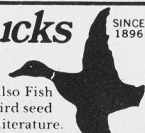
(\$9.95 Without Eggs.)

You get the new clear plastic dome
CHICK-HATCHER with 4 Quail Eggs
(available year-round) and Egg Hatcher's
Guide Book. Complete—nothing else to
buy. Send check or Money Order today.

G.Q.F. MFG. CO., DEPT. CS, BOX 1552, SAVANNAH, GA. 31498

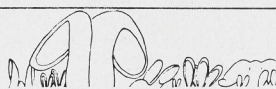
Attract Wild Ducks

"FOOD IS THE SECRET"
Plant our Giant Wild Rice, Sago, Wild
Celery, etc. Over 40 varieties available. Also Fish
Culture plants & Special Upland Game Bird seed
mixes. Send \$1 for interesting, illustrated literature.



WILDLIFE NURSERIES

P.O. BOX 2724-S, OSHKOSH, WISCONSIN 54903



We're up to our ears in rabbit information. Great
hobby, pet & show animal. Heart Healthy meat.
Illustrated Booklet \$1.25
American Rabbit Breeders Assoc.
Box 426-Dept. E4-Bloomington, IL 61702

Second Skins

(Continued from page 69)

synthetic fiber content. In addition, it features the most ample zip turtleneck of any underwear I've seen. Regarding odor retention, Thermax stands somewhere between Capilene and Lifa.

These three Duofold styles highlight an important point about efficiently layering underwear. Just because the expedition-weight Thermax/wool combination provides more insulation than the lightweight variety doesn't mean that it will be warmer under all conditions. If you're moving enough to sweat heavily, your perspiration will eventually wet the wool, which takes longer to dry than the Thermax layer to which it is attached. If your sport involves start-and-stop activity in very cold weather, you may be better served by wearing two or even three layers of the lightweight, pure Thermax underwear, which will dry more quickly than the Thermax/wool combinations.

Lifa, made by Helly-Hansen, is a worsted-spun and steam-set fabric of 100 percent polypropylene fibers. These two processes—the tight twisting of the fibers plus the setting into a particular shape—give Lifa three special properties: a much finer feel against the skin than that of other less expensive polypropylenes; minimal pill (the tendency to form little balls of fabric on the surface of the garment after several washings); and the retention of its shape after many launderings.

A completely hydrophobic fabric, Lifa relies on vapor transmission to dissipate perspiration. In effect, body heat pushes water vapor straight through the interstices of the garment. It's offered in five styles: lightweight Lifa Super; midweight Lifa Vermont; Lady Lifa (cut for a woman's figure); a two-layer style called Pro-Wool, which is made of a polypropylene inner lining and a wool blend outer layer; and expedition-weight underwear, made of 100 percent polypropylene.

Because Lifa retains its shape so well, it's favored by people whose performance depends on aerodynamic form—speed skaters and cross-country skiers. (Capilene and Thermax, on the other hand, tend to get baggy with use, though they return to their original shape after laundering.) As a cool-weather running costume, Lifa is hard to beat. In its lightweight styles (available in zip turtlenecks), the open construction transports moisture extremely well.

Like all polypropylene underwear, Lifa's main disadvantage lies in its retention of body odors. In fact, ordinary laundering doesn't remove the odor completely. When laundering Lifa, you must stretch it to make sure water enters all the fabric's interstices. This will clear out much of the retained smell. Lifa cannot be dried in a hot drier but, like other polypropylene

underwear, can be dried on "cool" or "air" settings.

Remington offers two weights of Thermax underwear, standard and heavy-weight, as part of a complete outdoor clothing line. Their underwear comes in subdued marsh colors as well as red and blue, and the heavyweight version is a good choice for those who must sit in the cold. There are no zip turtleneck styles, but the heavyweight top has a button fatigue collar for venting.

Some general observations on choosing and using underwear may be helpful.

◆ When you switch from wool/cotton blend longjohns to synthetic underwear, you won't need as thick a layer. The explanation for this is simple. When wool gets wet, it stays wet. You need more of it to feel warm. Synthetic fiber underwear dries quickly. In fact, the lightweight varieties dry within minutes; when they are dry, their original insulation is totally returned to you.

◆ Because this type of underwear is so lightweight, you can carry an extra top. When you get to your destination, put on this dry garment and let the damp one dry in the sun or breeze.

◆ You're only going to be as warm as your feet, head and hands. Wearing synthetic longjohns with cotton socks or a wool hat can be self-defeating. Synthetic



fiber hats and socks dissipate perspiration quickly while in the field and dry completely overnight—either by a fire or in your sleeping bag. In addition, synthetic hats don't itch as many wool ones do. For temperatures down to about 15°F, synthetic gloves do a better job than bulkier, insulated models. They let you feel your fishing line or your gunstock, and they can be dried inside your shirt.

ALL-PURPOSE OVERGARMENTS

One can prescribe the same underwear to a whole range of outdoor people and be certain that the prescription will work.

- ♦ Kennel
- ♦ Game Breeding
- ♦ What To Buy
- ♦ Property For Sale



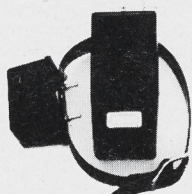
Rate: \$202.50 U.S./col. inch
effective Feb. '87

Sportsmen's Showcase

For Advertising Rates Write or Phone:
Kelly Smith, Classified Advertising Director
Ruth Moore, Classified Advertising Manager
SPORTS AFIELD, 250 West 55th Street,
New York, NY 10019 (212) 262-8840
OCT. '87 Issue Closes AUG. 1
NOV. '87 Issue Closes SEPT. 1

DOGS, KENNELS & ACCESSORIES

Sensitronix remote controlled dog trainer



Train your dog quickly, effectively and humanely. Exercise constant "push button" control which works in all directions, in all climatic conditions. Harmless electrical shock feature is adjustable for all sizes, breeds and temperaments of dogs. Transmitter uses replaceable batteries and transistorized collar receiver can be recharged hundreds of times for years of trouble-free operation.

Comes complete and ready to operate.

Model 104 - Single Dog Trainer

Supplied with energy cell recharger, adjustable shock feature, instruction booklet, tester for checking trainer's performance, dummy collar and written limited warranty. \$199.95 + \$5.50 (postage and handling).

Order now! Send check or money order to Sensitronix, Dept. T5, Box 920880, Houston, Texas 77292. Or call our 24 hour operators at 1-713-682-5898 and order C.O.D. Immediate delivery available. (Charge cards welcome)

Write for free literature on our Model 3000, a three channel transmitter for training up to three dogs simultaneously, or for more information on the Model 104 and its accessories.

BIRD DOGS

Chandler Kennels offers to you, the sportsman, the largest selection of gun dogs in America. POINTERS, SETTERS, and BRITTANIES. These dogs are all trained exclusively on wild birds under natural hunting conditions. All dogs registered out of top bloodlines. Trial allowed on all trained dogs. We now do professional training of outside dogs.

"In Business For Over 30 Yrs."

Send \$5.00 for price list, or better still, call or come by.

CHANDLER KENNELS

WORLD'S LARGEST SHOOTING DOG KENNEL
P.O. Box 68, Mexia, Texas 76867
Ph: 817-562-5501 Hollen (Jr.) Chandler, Owner



KIMBERTAL

The Most Sought after Name in
Doberman Pinschers
and Rottweilers

Champ-sired pups bred for
superior size, conformation,
impeccable disposition.
**FULL HEALTH & TEMPERAMENT
GUARANTEES**

SHIPPING WORLDWIDE
American Express, Visa
and MasterCard

KIMBERTAL KENNELS

RFD1 Kimberton, Penna. 19442 215-933-4982 or 933-3600



BLACK AND TAN BIG GAME & COONHOUND PUPS

From genuine, old-fashioned, extra-long eared,
bugle-voiced, fast cold trailing tree-bred hounds of
EARLY AMERICAN FAME. Type pups sired by our top
studs and from matings within our own pack. We
maintain the oldest and finest A.K.C. registered
bloodlines. Particulars and photos \$1.00.

MAPLE HILL FARM

Rte. 5, Dept. S.A., Greencastle, Ind. 46135
Phone: 317-526-2365



Introducing The First Tri-Tronics Video

"Tri-Tronics Basic Dog-Training" shows
you, step by step, how to use an electronic
Remote Trainer. See how easy it is to achieve
outstanding results.

Our new one-hour video is based on over 20

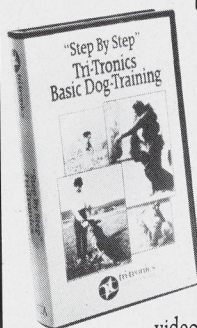
two-day seminars we've
conducted across the
country as well as
hundreds of mini-
seminars at our training
center.

You'll hear a special
sound and see a special
visual display when-
ever a transmitter
button is pressed.

Viewing your new
video over and over again is like
spending a week at the Tri-Tronics

Training Center in Northern California...and for
only \$39.95.

Order today. Call (602) 747-1111 or write:
Tri-Tronics, Box 17660, Dept SA, Tucson, AZ 85731.
Use check, money order, C.O.D., Visa or
MasterCard.



tri-tronics

SA-587

BIRD DOGS & RETRIEVERS TRAINED

No limit
**QUAIL
SHOOTING**

Season
Sept 1 - May 30
1100 acre
Hunting
Preserve
All facilities
including Dogs

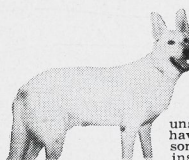
THE OLD-FASHIONED PROVEN WAY

Dogs trained daily on quail, partridge or
pheasants (ducks for retrievers) on our 1100 acre
hunting preserve. Training done the old way-no
short cuts-just hard work, patience, plenty of
birds. Particular attention paid to developing
staunchness on point retrieving and hunting
dead. All dogs broke to whistle. Clean, modern
cement kennels in the heart of Missouri quail
country. Monthly report plus pictures of dogs'
progress. Training \$125 per mo. (includes board).
No electric collars. Write for FREE folder. Call
816/758-5234.



BAIER'S DEN KENNELS

BOX SA, PECULIAR, MO 64078



WHITE GERMAN SHEPHERDS AKC

Our dogs are carefully bred to
be lived with, enjoyed and
loved. They are highly intelli-
gent, people oriented and of
unsurpassed beauty. Your puppy will
have a gentle, outgoing, happy per-
sonality with a strong protective
instinct. The ideal family dog.
Picture brochure \$1.

RICHARD C. WALSH,
301-434-3450

10103 Towhee Ave.
Adelphi, Maryland 20783

96 FREE PAGE CATALOG
WE CARRY A COMPLETE
LINE OF HUNTING,
TRAINING AND KENNEL
SUPPLIES.
**BRASS
NAMEPLATES**
YOUR NAME
STREET OR R. #
PHONE NO.
CITY AND STATE

FREE RIVETS
With
Nameplate

SOLID BRASS NAMEPLATES ARE DEEPLY STAMPED
WITH YOUR NAME, ADDRESS AND PHONE NUMBER

**5 for \$4.50
15 for \$9.50**
POSTAGE PAID

NITE LIFE COMPANY
BOX 1-SA - CLARKSVILLE, ARK.
72830

FULL CRY - The Magazine of COON DOGS and HUNTING

Latest news, training articles and stories about coon,
bear, lion and bobcat hunting. Lots of pictures. Club
news. **Oldest and best magazine** of its kind. Published
every month with over 160 pages. Sample copy
\$1.00. 1 year \$12.00. 2 years \$22.00. Satisfaction
Guaranteed. Order now from ad.
FULL CRY, Box 10-SA, Boody, IL 62514



FREE!



DON'T TRY TRAINING YOUR DOG WITHOUT OUR CATALOG

The latest Sporting Dog catalog
has everything you need to turn
out a great gun dog. Dummies,
game scents, books, collars and
leads.

PLUS hunting accessories, camo
gear, sportsman's gifts, art prints
and more.

☐ Send me a FREE catalog

Name _____

Address _____

City _____

State _____ Zip _____

Sporting Dog Specialties

Box 68, SA 104, Spencerport, NY 14559

Not so with overgarments. The duck hunter's coat is worthless to the backpacker or even the deer hunter. Nonetheless, there are garments—made from pile or pilelike fabrics—that, when used in layers, can serve not only in a variety of activities but also through a variety of temperatures. Let's look at a few of these extremely functional combinations. Once again, fabrics will be in **Bold Italics** while manufacturers will appear under **Bold Headings**.

Pile Pants and Jackets: Pile, like fishing rod blanks, can be made of several different textile fibers. Three of the most commonly used are nylon, polypropylene and polyester. Because polyester absorbs less than 1 percent of its weight in water, provides a good deal of insulation for its weight, is durable, and can be laundered and dried with little care, it has become the industry standard. Most important to the hunter, it is as quiet as wool.

Trousers made from a pile fabric dry quickly, often with the body heat generated by strolling, and are ideal for hunting in cold, wet or snowy environments. In addition, they can be worn under waders for cold-weather fishing or under a camouflage shell for waterfowling. They provide warmth at the end of the day for the winter camper. Pile jackets, on the other hand, can be used year-round, in many activities. They also offer the price-conscious buyer an alternative to having many specialized articles of clothing.

Numerous manufacturers offer pile tops and bottoms. Here's a popular selection:

Moonstone Mountaineering Purist Pile Pants and Jacket: Made from a pile dubbed **MoonLite**, which has a tightly knit, smooth outside and a fleecy inside, these garments dry slightly faster than any other pile I've tested. The pants weigh a mere 15 ounces (compare that to a pair of heavy wool trousers) and have full-length side zippers, which allow them to be put on over underwear or a pair of lighter pants, even while wearing boots. The Velcro waist closures eliminate the need for a belt, and there are two large pockets in which to warm your hands. Some pile pants are bulky and restrict your movement, but the Moonstone pants can be worn all day with comfort.

Synchilla and Polarplus: These are two marketing names for the same pile fabric made of 100 percent Dacron Du Pont polyester. Furry inside and out, it has a more wool-like feel than MoonLite pile. In fact, because it feels soft against the skin, I often wear nothing but a lightweight pull-over of this fabric during the summer. Synchilla and Polarplus dry quite quickly. A soaking-wet Synchilla or Polarplus jacket, like a Moonstone jacket, whipped in a circle through the air for a couple of minutes will be dry enough to wear comfortably.

Patagonia is the only company to use the name Synchilla, and it offers many pullovers, jackets and pants made from this fabric. One of the more useful models is

WHAT-TO-BUY

The Tackle Box



Top Quality Goods — Rock Bottom Prices — Saltwater & Freshwater Tackle — Rods, Reels, Lures, Line, Electronics, Apparel, Books
SEND FOR FREE CATALOG

The Tackle Box
Dept. SA
1340 E. 38th St.,
Cleveland, OH 44114
800-257-RODS (7637)
IN OHIO CALL (216) 391-5757

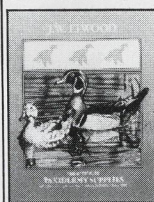
OFFICERS MILITARY PACK



ONLY
\$7.88
30 DAY MONEY
BACK OFFER

Now you can own this brand NEW military pack with 1,000 uses! Made of heavy-weight 16 oz. cotton duck that wears like "iron". Ideal size: 12½" wide x 11" x 5". Three pockets: large cargo compartment with moveable flap divider, handy outside snap pocket plus huge outside rear pocket. Adjustable shoulder straps make a fine backpack for the outdoorsman or student. Eyelets to attach canteen or shovel. Choose SWAT black or military olive color. Use 30 days, money back if not pleased. Only \$7.88 + \$1.87 delivery. Order today! Midwest Knife Co., Dept. M-2203, 9043 S. Western Ave., Chicago, Ill. 60620. Our 50th year. Special—any 2 packs \$16 postpaid. **BONUS:** Order now & receive a precision compass FREE!

MC & Visa accepted (312) 445-6166
C.O.D. require \$5 deposit



FREE CATALOG

- Huge selection
- Finest quality
- Same day shipment

TAXIDERM Y SUPPLIES

1-800-228-2291
J. W. Elwood Supply Co., Inc.
Dept. 28 • Omaha, NE 68102

NEW!



COMBINATION WATCH/LIGHTER

- Gas Refillable!
- Generous, Exquisite & Super Thin Type With High Quality Products.
- Smart Fashion Design for Men & Women.

Send Check/M.O. for \$19.95 + \$2.50 P+H to:

La-Draw Novelties

P.O. Box 20293 Columbus Circle • New York, NY 10023

POSTED HUNTING, FISHING TRESPASSING STRICTLY FORBIDDEN

YOUR NAME/TOWN/STATE IMPRINTED HERE

POSTED SIGNS

Vinyl, plastic or paper sign. Variety of styles & colors including Shooting Preserve. Inexpensive and each sign is guaranteed for three years. Write for your free sample today.

MINUTEMAN

Box 5661 (SF)
Greensboro, N.C. 27403

RECEIVE LOTS OF MAIL!

Save Postage. For a limited time only we'll list you with 100's of publishers, drop-shippers, firms wanting home workers, mailers, etc. Details, Send \$1.00, **Promotions**, 8050 So. Main, #2, Houston, TX 77025.

ANOTHER JIM BARNA TRADITION



We offer you extraordinary value in a log home that is truly authentic and engineered to meet the most advanced building techniques. Our piece-on-piece construction is available in a variety of systems. You may choose any one of our standard designs or your own custom home. In addition, we offer nationwide construction and on-site technical assistance.

Call or write today for our new 68-page catalog—only \$8.00. Distributor inquiries welcomed. Information Kit - \$11.00

James E. Barna

JIM BARNA LOG SYSTEMS*

Dept. SA8/87
Oneida, TN 37841-1011
1-800-962-4734

*Trade Name Of Barna And Company

NEW HIGH TECHNOLOGY PATENTED "UNDERROD"

Balanced thru reel seat. Smooth, linear momentum feel during casting. Uncluttered, sensitive upper grip area. 96% graphite rod—Made in America. (Reel not included)

Send \$55.00 + \$9.00 handling & shipping

Williams Sports Engineering
P.O. Box 31695, Dayton, Ohio 45431

IMPROVE YOUR SHOOTING



Shotgun Targets — See your shot patterns. Kit includes four 30" dia. paper targets with life size duck, quail profiles centered. Brochure explains choke-distance-ammo relation. \$6.95 per kit plus \$1.60 shipping, check or money order. Daley Shotgun Targets, P.O. Box 141199-40688, Dallas, TX 75214.

SATISFACTION GUARANTEED.

PROTECT YOUR PROPERTY WITH

BURGLAR ALARM DECALS

Thieves and intruders will stay away when they see these **WARNING STICKERS** on window and doors. Easily applied! For home—auto—trailer—boat—office—stores. Package of 10 only \$3.35 ppd. Send to: **NEUSCHAFER MERCHANDISING**, Dept. 0039 P.O. Box 515, Hawley, PA 18428

their Synchron Jacket with a Taslan nylon shell. Cut with neat lines, it is ideal for riding. The shell fabric is windproof, sheds snow, and shrugs off branches, while the pile insulation is substantial enough to use through the winter with the addition of some underlayers. I've worn this jacket while crawling through the sage flats of Wyoming during an antelope hunt, while alpine skiing in Alberta, and while walking down New York City's Fifth Avenue one windy, cold day last December.

Woolrich also offers a similar jacket called the Crew Jacket, which has a lining of Polarplus covered by an outer of Du Pont's new Supplex nylon. The Crew Jacket's sleeves are insulated with Thinsulate and lined with 100 percent nylon, to make the jacket easier to get into if you're wearing a thick, coarsely woven shirt. However, the Thinsulate sleeve lining is not quite as warm as the Polarplus insulation that fills the torso of the jacket.

Marmot Mountain Works is another company that uses Polarplus. It offers a sweater in this fabric, with underarm zips for ventilation when you're exercising heavily, as well as Polarplus overpants.

Synchron and Polarplus hats and balaclavas are also fine alternatives to woolen headgear. Both Marmot and Patagonia make several styles.

Remington offers a Polarplus jacket as the middle insulation layer in its outdoor clothing line. The jacket has a full-length

front zipper, patch pockets, Cordura elbow patches, and comes in a marsh brown color. Unfortunately, the elasticized wrist closures are made from a nylon that does not dry as fast as the Polarplus jacket.

Transalp Climbing Skins: Made of a four-way stretch *polypro/Lycra* blend, Climbing Skins are slightly thicker than expedition-weight underwear and are formfitting. Their tight knit makes them reasonably wind resistant. Because of their sleek fit and soft finish, they are quiet in the woods: No loose folds of cloth rub against each other or catch branches. As I mentioned above, I wore a test pair of knickers and the accompanying Guide Sweater through the entire 1986 Wyoming elk season, sometimes hiking through knee- and thigh-deep snow. I never had damp clothes in the morning though I had only my body heat and a backpacking stove to warm my tent. If you care for formfitting garments, the knickers, which are long enough to cover the calf, are one of the most useful all-round trousers made. Climbing Skins also come in full-length pants and bibs.

Light in weight, able to dissipate perspiration, and quick drying, synthetic underwear along with pile trousers and jackets provides what I call "foundation clothing" for any outdoor person. It's moderately priced, basic insulation that can then be supplemented by a specialized shell suitable for your particular sport. Next month,

in "Second Skins, Part II," we'll look at shells as well as insulated overgarments.

MANUFACTURERS

Damart, Dept. SA, 1811 Woodbury Ave., Portsmouth, NH 03805.

Duofold, Dept. SA, 350 Fifth Ave., Suite 5019, New York, NY 10118.

Helly-Hansen, Dept. SA, 17275 N.E. 67th Ct., P.O. Box 1031, Redmond, WA 98073.

Marmot Mountain Works, Dept. SA, 3098 Marmot Ln., Grand Junction, CO 81504.

Moonstone Mountaineering, Dept. SA, 5350 Ericson Way, Arcata, CA 95521.

Patagonia, Dept. SA, Box 150, Ventura, CA 93002.

Remington Arms Co., Dept. SA, 1007 Market St., Wilmington, DE 19898.

Transalp, Dept. SA, 1335 Broadway, Boulder, CO 80302. 303-443-8210

Woolrich Mills, Dept. SA, Woolrich, PA 17779. SA

Next Month in Sports Afield Southern Deer Roundup

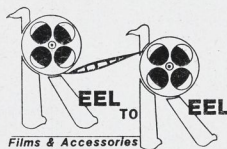
WHAT-TO-BUY

"NEW" VHS FISHING VIDEOS



THE INSIDERS GUIDE TO SALMON FISHING VHS 40 min. \$19.95
THE INSIDERS GUIDE TO TROUT FISHING VHS 40 min. \$19.95
THE INSIDERS GUIDE TO BASS FISHING VHS 40 min. \$19.95
THE INSIDERS GUIDE TO DUCK HUNTING VHS 40 min. \$19.95

Shipping charges \$2.50 per VHS tape. Payment: money order
New York residents please add sales tax. or personal check.



Mail order only. Send all orders to:

**REEL TO REEL
FILMS & ACCESSORIES
P.O. BOX 449
FRANKLIN SQUARE, N.Y.
11010**



THE POKE BOAT™ WT. 30 lbs.

Much More Stable
Than A Canoe.
Made From Aircraft
Quality Fiberglass.

CALL US: 800-354-0190
IN KY: 606-986-2336

PHOENIX

P.O. Box 109, Dept. SA,
Berea, KY 40403

\$400 A WEEK...I'M A TAXIDERMIST!

FREE INFO!! You can train for a money-making taxidermy business. A.I.T., the most respected name in taxidermy schools, has a full-time hands-on program ready to train you in a successful taxidermy business.

FULL-TIME RESIDENCE SCHOOL • PROFESSIONAL INSTRUCTORS • HANDS-ON TRAINING

Send name, address, and phone number to:
A.I.T. AMERICAN INSTITUTE OF TAXIDERMISTRY
Dept. SA-3232 McCormick Dr., Janesville, WI 53545
Not a Correspondence Course

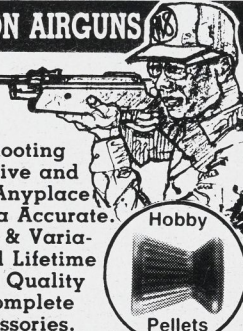
LEARN GUN REPAIR

EARN EXTRA MONEY • VA APPROVED!
Please RUSH FREE facts on how I can become a professional gunsmith the QUICK easy home study way. No Obligation. No Salesman will call.

NAME _____ AGE _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
MODERN GUN REPAIR SCHOOL dept. GBY87
2538 N 8th St • Box 5338 • PHOENIX AZ 85010
Mail Today! or call 602-990-8346

RWS PRECISION AIRGUNS

***Ideal Recreational Guns that Sharpen your Shooting Skills. *Inexpensive and Fun to shoot - Anyplace - Anytime. Ultra Accurate. *Over 40 Models & Variations - with Full Lifetime Warranty. *High Quality RWS Pellets. *Complete selection of Accessories.**



For New 1987 "Precision Products" Catalog, send \$2. for 1st class, or \$1. for 3rd class delivery to:

DYNAMIT NOBEL OF AMERICA INC.
105 Stonehurst Court, Dept. SA, Northvale, NJ 07647

NEW 6 FT. "4 IN 1" TAKE-DOWN BLOWGUN

New 1988 Survival Hunting "Commando" Models
Camouflage or Black MIMAS
Models add \$3.00 each gun
Regular Range 1 or 2 pc
Models in Feet take-downs
2 ft. 20 \$8.95 only
3 1/2 ft. 110 9.95 only
4 1/2 ft. 220 10.95 2 1/2 OFF
5 1/2 ft. 300 11.95
6 ft. 350 12.95
3-piece "4 in 1" Guns Aluminum collars. All guns fully assembled—No Kits!
6 ft. 350 17.95
8 ft. 450 22.95
9 ft. 550 24.95
Add \$1.95 postage EACH paid gun.
Combined get 2 ft. gun + 3 1/2 ft. gun + 4 1/2 ft. gun REG \$29.95 FROM \$8.95 + post.
DEALERS: 1 OR 2 PC. GUNS
12-2 ft. \$72.00 12-5 1/2 ft. \$96.00
12-3 1/2 ft. 79.00 12-6 ft. 102.00
12-4 1/2 ft. 89.00 12-6 1/2 ft. 120.00
SILENT, POWERFUL, ACCURATE, bullet impact! Kills game, pests! Target, plinking, thrilling sport! Astound friends! Compressed breath gives rifle power! Pierce 1/2" wood! NO TOY! Rugged aluminum. Ideal gift! 135 steel darts, instr. (Extra darts 100 \$3.50, 200 \$5.95, 500 \$14.00, K \$25.00, Cone darts 100 \$8.00, 200 \$10.00, 500 \$24.00, Broadhead darts 12 \$5.90, 24 \$10.95, 50 \$24.50)
Bonus: Buy 2 guns get 400 darts! quivers! targets! poison info! carry case! Buy 3 same: 600 darts! Buy 4 same: 900 darts! free 2" gun! Buy 5 same: 1100, + free 7th gun! Buy 6 same: 1300 + free 8th gun! 30-day money back guar. Lifetime breakage guar. 1-day Service. Send cash, check, M.O. Millions sold USA Made Use 30 Days No Risk!
VISA, M.C., AM.X. (C.O.D. \$20 MINIMUM) TOLL FREE 1-800-541-4100
24-HRS. 1-800-222-3119 or No C.O.D. to this number
Blowgun World, Inc., Box 25183-SA Salt Lake City, UT 84125

Polyethylene lines of lines
\$2 / doz.

knit / line. 5 / pair

Socks 4 / pair

Catalog \$3

EDITORS AFIELD

We prevent the first three types of heat loss every time we go camping. A foam pad under our sleeping bag stops heat loss by conduction. A wind shell prevents heat loss by convection, and placing a hat on one's head cuts out loss through radiation. Vapor barriers, on the other hand, are less commonly used. They are coated fabrics, and their impermeability prevents the cooling effects of evaporated perspiration.

To understand how these fabrics work, you must visualize the two sorts of perspiration that we emit. The first is called sensible—the stuff that appears on your brow after running half a mile. The second, named insensible, is produced every second of everyone's life and is continually evaporating. It's what keeps our skin moist, so that we don't shrivel into prunes. When both temperature and humidity fall, the sweat glands produce more insensible perspiration until a moisture level of 70 to 100 percent humidity is created close to the skin. As the production of insensible perspiration continues, evaporation, unless prevented by something such as a vapor barrier liner, also increases and the body loses heat. In hot weather, this heat loss is exactly what we need. In cold weather, we get chilled.

To give you an idea of the power of evaporative cooling, consider that you can lose about four pounds of water by evaporation during a night's sleep. One engineer and designer of vapor barrier clothing, Jack Stephenson, has calculated that this loss is equivalent to 4320 BTUs. More graphically put, our bodies are giving off the energy required to melt 30 pounds of ice or boil 87 cups of coffee. It's little wonder that we sometimes feel cold in the winter.

To make matters worse, this water vapor has to go somewhere—namely, through the down or synthetic insulation of your sleeping bag. It then condenses on the inside of the shell of your bag and possibly freezes, sealing the pores. More water vapor hitting this frozen layer will also freeze, decreasing your insulation night by night.

A vapor barrier liner (VBL) immediately does two things. Since you're contained in a miniature greenhouse, the humidity around your body rises. When it reaches nearly 100 percent, your insensible perspiration stops and thus heat loss also stops. Since you, the moisture producer, are now separated from your sleeping bag's insulation by the VBL, your down or fiberfill doesn't get wet. Champions of this system claim that, when used properly (shut tight around the neck), a VBL will increase the temperature rating of a sleeping bag by 20°F.

Two points should be emphasized about the use of VBLs. First, you won't get drenched in your own sweat. When the humidity inside the VBL becomes high enough, insensible perspiration stops. In the morning, you're only slightly damp. Some people say that this dampness, combined with the slick feel of coated nylon against their skin, is objectionable. I find that wearing polypro underwear inside a VBL makes it considerably more comfortable. Second: It must be cold to use VBLs. In fact, 5° or 10°F is a good starting point. If you use a VBL when the temperature is much higher, you'll get hot and sweaty.

Vapor barrier sleeping bag liners cost about \$25 and are a worthwhile investment for winter campers. VBL boots, originally designed for arctic troops, and the newer vapor barrier clothing have an even wider range of applications, particularly for people who move slowly or actually sit in cold weather.

Let's look at the clothing first. It works in the same way as a vapor barrier sleeping bag liner—by trapping insensible perspiration close to your skin and stopping evaporative heat loss. VBL shirts and pants have one catch, though. If you start to move quickly, you'll heat up quickly. Then it's important to shed clothes and vent the shirt and/or pants through the neck and cuffs, or armpit and hip vents if they've been provided. Ideally the shirt and pants should be worn against your skin. However, they can also be worn with polypro underwear



Vapor barrier sleeping bag liners, clothing and boots help you stay comfortable.

for greater comfort.

The nature of your outing will indicate whether to use VBL clothing. If you're going to be sitting or walking slowly, try it. If you're planning to hike quickly, snowshoe at a good pace, or do some cross-country skiing, regular winter clothing would probably be a better choice.

VBL boots, on the other hand, can be used when you're moving rapidly. After all, who hasn't experienced cold feet (even while running) in cold temperatures? Vapor barrier boots can help cure this condition. Perhaps the finest of the genre are Bata's Zero Guards. Sometimes called Mouse Boots, the Zero Guard's insulation consists of wool and felt layers permanently sealed between rubber outers and inners. You wear the boots with one pair of wool or pile socks and, as might be expected, your feet sweat moderately. But since evaporative heat loss is prevented and the sealed insulation can't be wet, your feet stay warm. The Zero Guard, used regularly in the arctic, is designed to keep toes safe from frostbite in temperatures as low as -70°F. The boot works well on snowshoes and in certain ski bindings. If you have perennially cold feet on a deer stand or in a blind, this boot's for you.

Wearing the Zero Guard, which weighs seven pounds for a pair of No. 8s, can often be overkill. But there are ways to incorporate VBLs into your regular boots. Several of the companies listed at the end of this column make VBL socks—plas-

tic bags shaped like your foot and used in the following way. First put on a thin polypro liner sock, and then pull the VBL sock over it. You next put on a wool or pile sock, and finally stick your foot into your boot. The homemade way of creating such a system uses a plastic grocery bag or plastic bread bag over each foot.

Another way of using VBLs on your feet is to dispense with the plastic bags altogether and go to neoprene socks, much like the wetsuit booties that scuba divers wear. These thin socks, designed for use in hiking boots, can be ordered from Rooster Mountaineering.

VBLs also work well on your hands. Stephenson produces polyethylene VBL gloves for use inside overgloves or mittens. Far more durable are neoprene gloves and mittens, which can be purchased in skin diving outlets. These can also be used inside larger gloves and mittens if conditions are particularly brutal. Cheaper than neoprene are plastic dishwashing gloves, which work in wool or pile mitts. Just be forewarned that if you use them, you'll have no excuses about being unable to do the dishes!

Where To Write

Vapor barrier shirts, booties, gloves, sleeping bags, and tents: Jack Stephenson, Dept. SA, R.F.D. 4, Box 145, Gilford, NH 03246, phone 603/293-8526.

Vapor barrier pants and shirts: Moonstone Mountaineering, Dept. SA, Box 4206, Arcata, CA 95521, 707/822-2985.

Vapor barrier sleeping bag liners: Camp 7, Dept. SA, 1275 Sherman Dr., Longmont, CO 80501, phone 303/772-7777.

Neoprene socks and mittens: Rooster Mountaineering Co., Dept. SA, Box 157, Aspen, CO 81611.

Neoprene gloves, mittens and booties: Body Gloves, Dept. SA, 530 6th St., Hermosa Beach, CA 90524, 213/372-8423. VL boots: Bata Shoe Co., Dept. SA, Belcamp, MD 21017, phone 301/272-2000.

Coming Soon: Frostbite.

WHICH OF ITS 196 REFINEMENTS WOULD YOU LIKE TO HEAR ABOUT FIRST?

We could have left well enough alone.

After all, the Mercury Lynx we introduced in 1981 was a very successful car.

Instead, we rethought.

Reworked.

And every year found there were still things we could do better.

So today, in addition to front-wheel drive, four-wheel independent suspension, and the efficient performance that you've come to expect from a technologically advanced car, we offer more.

Like an optional engine control system that uses the most advanced on-board computer ever put in a car, to keep seven different engine functions constantly working at peak performance.

Side window de-foggers for good visibility.

Rear seats that fold flat (and split in most models) to give you more storage space when needed.

And a completely redesigned instrument panel that places driver controls where research has found you're likely to reach for them.

There have been major refinements such as the offering of five different power plants, including a newly designed diesel

option that delivers fuel economy ratings of 66 EST. HWY. **45** EPA EST. MPG*.

And small painstaking additions that are perhaps even surer signs of the Mercury commitment to quality.

Like a small strip of laminate placed just ahead of the rear wheels to cut down on abrasion from rocks thrown up from the road.

Listening to Lynx owner suggestions has also led to changes.

Refinements to Lynx, for example,



Get it together—buckle up.



Wax Wear

The British invented it long ago; it's still keeping sportsmen warm and dry, and will probably never become obsolete

DARREL MARTIN

Bartlett Lake was only a day away, so the three hikers trudged off through the light rain. It was a grand country of tidewater glaciers and blue-water fjords. With peaks penetrating 15,000 feet through stacked clouds, the Fairweather Range, which would soon demonstrate the irony of its name, dominates the western border of Glacier Bay National Park. The Fairweathers bundled and kneaded the encroaching clouds until they surrendered; hour after hour, they rained. Nothing unusual—this is a strip of raintree country hanging from the wet underbelly of Alaska; it's the northern extremity of the Pacific Coast rain forest that extends down through British Columbia and into northern Washington. Within the dripping spruce and thick scrub, the three hikers eventually lost their trail. Lacking the sun's mark, they would have to spend the night. Snuggled together under a lean-to of boughs and moss, they endured a night of rain, wind and cold. One hiker wore a quilted waxproof and a wool shirt; he was dry and warm. The others wore jackets made by advanced technology, and they chilled. In the morning, seachers met them as they followed the sun back to camp. My son, Mike, would never doubt the virtues of waxproof after this Alaskan wilderness adventure.

Most American anglers are not familiar with waxproof clothing. We are more accustomed to the urban look and feel of advanced

synthetics. Waxproofs look and feel country. They have a fluid finish that smells of grouse moors and salmon beats. Waxproofs are worn by hunters, horsemen, anglers and now, Madison Avenue models. The major producers of waxproofs, all English, are 'Keeperwear, Barbour, Britton, Thorndale and Peter Storm. The English have always appreciated the natural, protective qualities of waxproofs.

There is some evidence that the original waterproofing (at least 12,000 years old and perhaps dating from the Stone Age) was fat applied to woven items such as baskets. Even today, some Mexican cowboys rub tallow on their leather chaps. Waterproofing has been accomplished with fats, paraffin, wax, silicones, rubber, gums, resins, oils, tars and metallic soaps. Linseed oil was used for waterproofing in the 14th Century; later, it was applied to canvas or cotton duck to produce what was called oilskin. Each linseed application had to dry thoroughly before the next coat could be applied, and the whole process could take up to a year. The tacky feel of the final coating was cured by a homemade concoction brewed from egg whites. Aluminum soaps combined with fats were used in the 19th Century. Hot brews of pitches and waxes made tarpaulins and wagon-covers. (*Tarp* and *tarpaulin* are derived from the word tar.)

(Here is a between-the-wars formula for
continued on page 44

Surface
Stone Fly

Spruce
Moth

Dragonfly

Tarpon Fly

Sculpin
Darter

Skater

Stone Fly Nymph

Redfin
Darter

Silver Leech

#18
Midge

Mickey
Finn

Blue
Squirrel
Hitch Fly

Permit's
Pleasure

Ghost
Caddis

Red
Ant

Silver
Brown
Hitch Fly

Silver
Pheasant

Gold Bug

Wild
Wings

Barracuda Fly

Royal Wulft

TETON

R O D S

Madison River, Henry's Fork, Big Hole and Silver Creek . . . 18 of our 8, 8½ and 9 foot models were born and bred on these Western waters. Sophisticated yet rugged, TETON rods give you the ultimate fishing experience strike after strike.

For more information see your fly fishing outfitter - and ask them about "Teton's Duplicate Rod Program". Under the Duplicate Rod Program, Teton will replace your damaged rod at no charge for up to two years.

For detailed brochure, send \$1 to us at:
Teton Rod Mfg. Co.
Box 734, Sun Valley, Idaho 83353
(800) 272-7377
Dealer Inquiries Invited

Waxwear—from page 25

"soft" waterproofing: 200 pounds of Trinidad asphalt, 90 pounds of spindle oil, 90 pounds of paraffin wax and 400 pounds of solvent naphtha—the term *naphtha* comes from the Persian for pitch. Combine all and apply to your fabric with mangle rollers in a trough.)

Nature has always used a variety of waterproofs: the oiled feathers of a duck or the wax coating on a rhododendron leaf. Oil and wax are nature's way of repelling water, and they can be as effective on an overcoat as on a duck's back.

Waterproof usually means that the fabric pores are sealed, while water-repellant indicates that the fabric is constructed or treated without sealing the pores. However, wax-proofed materials, like the popular Gore-Tex, achieve absolute waterproofing even with open pores. It's the size of the pore that counts; the fabric appears solid, but in fact it has millions of tiny micropores. These cells are too small to permit wind and rain to penetrate, yet they allow sweat vapor to escape. Open pores make a "breathable" and consequently a more comfortable garment. In a warm rain, an impermeable coat, such as one made of plastic, may be as wet on the inside as on the outside, and not from the rain.

The microporous membrane is not new. Although waxproofs date from the turn of the century, Gore-Tex made the principle popular in America. Gore-Tex, developed in 1958 by former DuPont research engineer Bill Gore, is an expanded polymer resin composed of polytetrafluoroethylene, commonly called Teflon. Gore-Tex pores, 9 billion per square inch, are some 20,000 times smaller than a drop of water and 700 times larger than an individual molecule of water vapor. Body heat "propels" perspiration (sweat vapor) through the pores, while at the same time rain and wind are blocked. Gore-Tex can make remarkably attractive fabrics, but soil and abrasion can destroy its waterproofing. Waxproof works in a manner similar to Gore-Tex, but with some distinct differences. Waxproofing, made mostly from hydrocarbons, also has pores (they are less uniform) that allow the garment to breathe. Because waxproofing is a fluid finish (or at least a slow, mobile finish), the pores actually vary somewhat in size according to temperature. And because the "finish" flows, the wax wicks into the drier areas. In addition, the penetrating wax lubricates the interstices of the fibers to reduce friction and wear. The typical active life span of a waxwear can be 20 years.

Furthermore, waxproofs are reproofable. Through time and wear, some of the wax finish will be depleted. Wax garments tend to produce semi-permanent creases, especially in the arms, and the rubbing of straps, waders and sleeves can eventually remove the protective wax. The ridges formed by creases are subjected to greater wear than the



HUFF HOUSE

Serving you for four generations

Small resort perfect for the fly fisherman and the family. Located in the southeast corner of the Catskill Mountains, 9 miles from the Delaware River, 5 miles from Junction Pool and the East Branch of the Delaware. Excellent food, comfortable rooms with private bath, tennis, heated outdoor pool, golf, and fishing on premises. Open May 2nd to October 26th. No credit cards accepted.

ROSCOE, N.Y. 12776

607-498-9953

914-482-4579

FREE CATALOG

DAN BAILEY'S FLY SHOP



By Mail Direct to You.

See more than 300 Dan Bailey hand-tied flies in full natural color! Also hundreds of recommended products for successful fly fishing. Dan Bailey flies are famous worldwide for balance, floatability, durability and attractiveness to fish.

SEND FOR YOUR FREE COPY TODAY

NAME _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

DAN BAILEY'S FLY SHOP
P.O. BOX 1019-E
LIVINGSTON, MT 59074

Minipi CAMPS

Jack E. Cooper

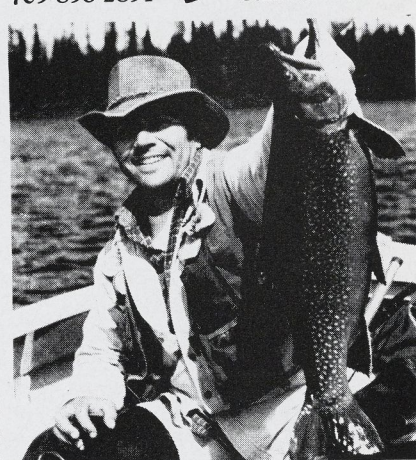
709-896-2891

P.O. Box 340

Happy Valley

Labrador

Canada AOP-1EO



The Anne Marie Lake watershed of the famous Minipi River has giant Brook Trout waiting for you. Wilderness fishing for wild Brook Trout AVERAGING over five pounds each. One trophy fish per sport to take home; all we ask is that you let the others go alive.

Chartered helicopter service from Goose Bay to our comfortable lodges in the legendary Minipi region, the finest Brook Trout fishing area in the world! Three world records since 1980!

Send for FREE COLOUR BROCHURE.

mer fish in 1985) to provide for necessary spawning escapement.

B.C. Fish & Wildlife has recognized the ever-growing pressure on steelhead, as have many anglers and guides in the region. The Morice/Bulkley is the most tragically affected system, with 78 percent of the total steelhead run harvested by commercial nets, Indians and anglers in 1985 (although that remains an improvement over the 1975 low of 53 individual escaping steelhead, after a near-90 percent harvest of Morice/Bulkley steelhead). Current plans are to make the Morice strictly catch-and-release for steelhead, with mandatory release on the Bulkley until October. Steelhead catch-and-release is being contemplated for the entire Skeena drainage—primarily because of the heavy incidental catch of steelhead in the commercial salmon fishery.

The B.C. Fish & Wildlife Branch emphasizes that anglers have increasingly recognized and accepted the vital importance of catch-and-release to steelhead spawning. On the Skeena, as the angling kill has declined substantially since 1975, the number of steelhead released has risen dramatically. The present angling catch (approaching 15,000 steelhead when both killed and released figures are combined), is higher than at any time in Skeena angling history, while all Skeena tributaries are experiencing historic highs in their five-year-average escapement figures. Despite these optimistic indicators—the direct product of mandatory regulations combined with the modern angling ethics practiced by many sports, guides and lodges (Schmiderer's Exclusive Fishing Lodge strictly limits guests to catch-and-release)—the spiraling increase in the commercial sockeye harvest still threatens the future of summer-run Skeena steelhead.

The Skeena Country is no longer the land of tiny frontier settlements I'd remembered from 1963. What were outposts have become bustling towns, some very nearly cities, with airports that accommodate large jets. Timber-harvesting is rampant in what had been virgin forest, and the logging roads provide ever-increasing access into what had been remote northern bush country. Hydroelectric dams and other heavy industry are constant threats. While much of the country is yet unspoiled, it is frontier, presently teetering on the edge of the irreparable damage so common where civilization gnaws on wilderness.

As yet, the Skeena Country remains a steelhead paradise; perhaps more so than at any time in its recent history. Indications are that it may continue so, as long as the B.C. Fish & Wildlife Branch maintains its present integrity and responsiveness toward fishery conservation ideals (despite being cornered by salmon enhancement plans), and anglers continue to nurture progressive ethics that will assure perpetuation of both the sport and the resource. □

BILL MCMILLAN is a steelhead angler of considerable repute in his home state of Washington.

POLLY ROSBOROUGH: Master Fly Tier an exciting new video tape

Learn the secrets of tying
THE FUZZY NYMPH
from the man who invented them!
Visit with Polly at his bench on
video tape. (VHS or BETA)

Send \$45.00 check or money order to:
PEGASUS PRODUCTIONS INC.
P.O. Box 3062-R Ashland, OR 97520
(503) 488-1898



IF YOU ARE LOOKING FOR:

- DISTANCE CAPABILITY
- DELICATE PRESENTATION
- ROLLCASTING PERFECTION
- THE ALL-IN-ONE FLY LINE

THE ANSWER IS:

- Triangle Taper
- Triangle Taper
- Triangle Taper
- Triangle Taper

AVAILABLE IN FIVE SIZES: 2/3, 4/5, 6/7, 8/9, and 10 weight

FOR MORE INFORMATION, CONTACT YOUR DEALER OR
JOAN & LEE WULFF INC., BOX CC, LIVINGSTON MANOR, NY 12758
U.S. Patent #4524540 Write for our FREE CATALOG of Fly-Fishing Accessories



rest of the garment. But waxproofs are one of the few garments that may be restored, and simply. Brush off all dirt and wash the garments in cold water. (Never use hot water, detergents, solvents or soaps as these will remove the proofing.) Waxproofing companies sell small tins of reproofing. Heat the compound in its can in water and, with a sponge or cloth, work the reproofing well into the fabric, paying particular attention to seams, creases and dry spots. Avoid using excessive proofing. The proofing must penetrate the fabric, not merely cover it. Proofing may also be used to cover needle holes and patches. For a finer finish and greater penetration, the garment may be heated with a hair drier after it has been reproofed. Hang it overnight in a warm place.

Care of a waxproof is also simple. After a wet day afield, hang it in a warm, airy place to dry slowly. Never force-dry it, or hang it near flame. Mildew may sprout if the garment is stored while still damp.

When you acquire a waxproof, it has a rather wet feel. Exposure and use will reduce this, but I never store a waxproof near other garments. And I prefer a lined waxproof, as this assures that the wax will not weep onto anything worn beneath.

Design and airflow may compromise any waterproof garment, but some outdoors people believe that where heavy weather, flexing and soiling conditions exist, waxproofs are superior to any other type of protective garment. The breathe-ability of this waxed cotton is extremely good, approaching, if not surpassing, Gore-Tex products. Much depends upon the weight, density, twist, type and length of the yarn. Waterproofing is just a matter of degree; it's like starting with blotting paper and working your way toward sheet metal.

"Hydrostatic-head" waterproof testing is measured by pouring water, at a controlled rate, into a vertical tube 50 millimeters in diameter. A fabric sample is attached to the bottom. When the third drop of water appears on the underside of the fabric, a reading is taken of how many centimeters of water column it took to drive the water through. It is generally assumed that if you attain a hydrostatic head reading greater than 150 centimeters, you have a waterproof product. There are a number of other tests, but it's well-established that waterproofing efficiency falls rapidly with excessive soiling and flexing, and only waxproofs reconstitute themselves through a simple increase in temperature. The warmer air re-flows the wax throughout the fabric.

Waxproofs can stand a wide range of climatic conditions and quite rough treatment. They are even used by the British military. Some companies, 'Keeperwear' for one, constantly search for a drier and more effective wax, and methods of manufacture also are constantly changing. This is especially true of the waxing process itself. Although it sounds simple, complete wax penetration is not easy. Cotton fibers, a natural material, are very complex and more "hol-low" than man-made fibers. Even the tre-

ALASKA'S FISHING...

"In all my years as an outdoor writer I've never seen fishing that approached it."
- Lefty Kreh

King Salmon, rainbows,
Arctic Char, silver salmon,
grayling... the best fishing in
Alaska, maybe even the world!



Call or write
for a FREE
COLOR BROCHURE.

Float Planes • Daily Fly Outs
Jet Boats • Private Lodge
Luxurious Accommodations
Professional Staff

*Bristol Bay
Lodge*

P.O. Box 6349
Anchorage, AK 99502
(907) 248-1714
Ron & Maggie McMillan, Prop's.

THE BRITTANY



The Saddlewood Company invites you to consider the unique design, sturdy construction, stylish appointments and versatile features of the BRITTANY...the finest fly tying chest ever produced.

- Hand crafted, deep-grained solid mahogany.
- Oil stained, with a hand-rubbed lacquer finish.
- Solid brass hardware that reinforces the corners and complements the natural beauty of the chest.
- Double drawers with removable partitions to provide convenient storage for tools, hooks and patterns.

- A removable front panel that converts to a portable tying desk, with a rugged hardwood stand for use with clamp type vices. The vise stand is removable.
- A unique hanging file system that permits eye level inspection, color coding and instant access to all of your capes and pelts contained within twenty-two transparent Zip Loc® files.

MODEL #102
Chest only with 10 files; Tool Rack, waste control and extra files sold separately.
Size: 19.5 x 9 x 12.5 in.
Price: \$169.95
Shipping: \$9.95

ORDER TODAY!
214-271-5618
No Collect Calls Please

We strive for immediate delivery and will provide shipping date at time of order.

American Express, MasterCard, VISA accepted. Patent pending.
Tools and Materials Not Included.

ACCESSORIES

Extra Files w/hangers	\$ 9.95/doz.
Tool Rack (holds head cement and 10 tools)	\$ 9.95/set
Waste Control & Fly Drying Rack	\$ 9.95/set
36 Compartment Dubbing File w/hangers	\$ 9.95/set
Carry Case (lined w/1/4" polyethylene foam)	\$59.95
Plus Shipping & Handling	

Rod & Reel
THE JOURNAL OF AMERICAN FLY-FISHING

SUBSCRIBER SERVICE

1. Change of Address

☐ I'm moving. Please include your old and new address (affix mailing label at right if available). Please allow six weeks for the change to take effect. You should ask your post office to forward your magazines, and you should guarantee forwarding postage, or the post office will not forward your magazines.

2. Orders

- ☐ Please start my **new subscription**—1 year for \$13.97.
☐ Please **renew** my subscription—1 year for \$13.97.
☐ I'd like to give a **gift subscription**. To order a gift subscription, attach your mailing label or write your name and address at the right. Include your recipient's name and address on a separate sheet. We will mail you a gift card so you can announce your gift personally.

- ☐ Payment enclosed
☐ Bill me later

3. Subscription Problems

Please write to us, enclosing your mailing label if possible, or if you prefer call toll-free 1-800-225-5669.

Moving? Renewing?

Attach your mailing label here if available, or print your old address below.

Old Address:

Name _____

Street _____

City/State/Zip _____

New Address:

Name _____

Street _____

City/State/Zip _____

Rod & Reel
THE JOURNAL OF AMERICAN FLY-FISHING

Subscription
Department
P.O. Box 10141
Des Moines, IA
50340

Henry's Fork

Madison

Firehole



YELLOWSTONE in the Fall

A Medical Seminar for Fly Fishing Physicians

Wilderness Medicine/Radiology—Trauma

- * 10 hours of Category I C.M.E.
- * 4 nights lodging, all meals included
- * 3 days of guided fishing

September 16th—19th, 1986

(tuition \$790.00 Course limited to 12 participants)

Contact:

T.W. Hard, M.D., FACEP
4858 Montecito
Santa Rosa, CA 95404

or



Kay Mitsuyoshi
Fishing International
400 Montgomery
P.O. Box 2132
Santa Rosa, CA 95405
707/542-4242

Upcoming Seminars: Christmas Island, Winter 1987
Alaska, Katmai, June 1987

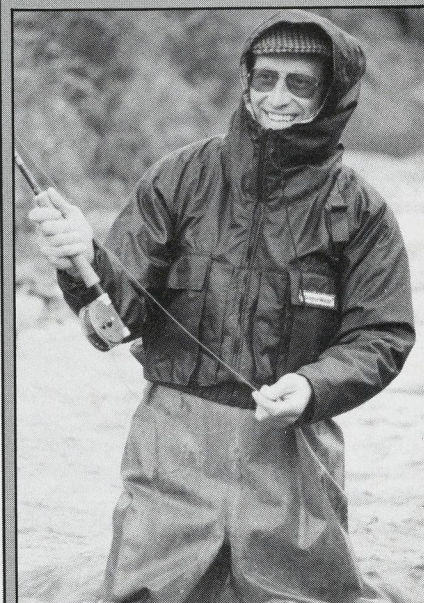
mendous force generated by the traditional mangle rollers cannot guarantee complete penetration of the wax, as the rollers trap air pockets that retard wax impregnation. 'Keeperwear uses a "two pass" wax machine to deposit wax evenly throughout the entire thickness of the fabric.

Fly-fishing is a sport of sensations. And I have found an odd pleasure in watching a lake or river fill with rain when I am snuggled deeply into a wool sweater topped with a waxproof. It is rain that makes lakes and rivers and fish possible. And it may be that a natural fabric from the grouse moors and the salmon beats makes the rain not only tolerable, but also one of the simple pleasures of angling. □

DARREL MARTIN, author of our Lexicon column, lives, fishes and writes in rain-soaked Washington.

Waxwear For Fishermen

Barbour makes the popular Gamefair, Durham Lightweight and Bedale jackets. 'Keeperwear produces the River 'Keeper, the shorter 'Keeper Quail and the Grouse 'Keeper. The Barbour Spey jacket and the 'Keeperwear Flye-Fysher jacket are made expressly for deep-wading fly fishers. Following is a comparison of these two specialized garments.



'Keeperwear Flye-Fysher Wader Jacket

Features:

1. Tightly woven Egyptian waxed cotton fabric
2. Spacious, slightly visored hood



the Very Best in Luxury Sportfishing!

- ☆ Exclusive deluxe accommodations restricted to only 12 guests.
- ☆ Fish for trophy 'Bows, Kings and 8 other freshwater species. Plus, a halibut excursion.
- ☆ Guided daily fishing flyouts from the lodge by two Beaver float planes.

Write or call for free brochure
c/o Dean Carrell, P.O. Box 196012, Anchorage, Ak. 99519
(907) 243-4200

HOW IT'S DONE

BY ROGER BALL

CLEAN UP ON DOWN

Down-filled coats, vests, and sleeping bags are lifesavers when the temperature plummets, but they often become troublemakers after we return home. Down fibers have a natural tendency to clump during use or storage, losing most of their insulating value in the process. Worse, down has an almost magnetic attraction for dirt, and it soaks up perspiration like a sponge. Before long, even top-grade bags and clothing develop offensive odors, become hard and lumpy, and leave us shivering.

Periodic cleaning and fluffing will solve these problems, of course, but what kind? Even experts disagree. Some designers and manufacturers specify dry cleaning, while others insist upon conventional soap-and-water laundering. Either method can do an excellent job, or it can literally destroy an expensive coat or bag unless you pay careful attention to details.

If you choose dry cleaning, it's critical to select a cleaner who will use only petroleum-based cleaning fluids. (The chlorinated-hydrocarbon fluids used in some shops will strip the essential oils from down.) Make certain, also, that your cleaner fully understands the unique properties of down, and that he won't treat your bag or garment as if it were made from conventional materials. If you're less than eager to quiz dozens of dry cleaners about their qualifications and shop practices, the manager of your local backpacking or mountain shop can probably recommend several reliable cleaners.

Be especially careful with any piece that's been patched. Cleaning solvents dissolve almost every type of common adhesive, allowing rip-stop tape and other patches to pop off and spill the expensive, hard-to-replace filling. Either replace all of the glued-on-patches with sewn-on-patches, or switch to conventional laundering instead of dry cleaning.

You may want to instruct the cleaner to renew the water-repellent coating of the piece's outer shell. Such treatment will probably be needed after every third or



fourth cleaning, since even the gentlest dry cleaning solvents destroy the moisture barrier much quicker than laundering does.

Finally, be certain to request an extended cool-air tumble-drying for your clothing or bag, even if there's a small surcharge for this service. Tumble-drying will break up the clumped down, redistribute the filling evenly throughout the piece, and restore the down's original loft—all of which make significant contributions to warmth and comfort. More important, plenty of fresh air and agitation is essential in order to dissipate residual solvent fumes that might otherwise linger for days or even weeks. If they're not eliminated, these potentially toxic vapors can cause serious health problems. The risk of vapor-induced illness or death is statistically small, but an extra dollar or two invested in tumble-drying is cheap insurance.

Do-it-yourself laundering takes more time and effort than professional dry cleaning, but it's cheaper, it doesn't leave any solvent fumes behind, and it's probably gentler to your clothing or bag.

Most household-grade washers and dryers can handle a down vest or jacket, but a full-length parka or a sleeping bag will grossly overload anything less than the heavy-duty commercial washers avail-

able at laundromats.

Whenever possible, use one of the specialized soaps compounded specifically for down, or an extra-mild soap such as Woolite or Ivory. You can, if necessary, substitute a very mild laundry detergent, but avoid full-strength or extra-strength detergents. Above all, don't use those few brands that contain enzyme-based additives.

Pre-treat all visible spots and other heavily soiled areas by gently rubbing them with liquid soap or with a paste made from soap flakes and cool water.

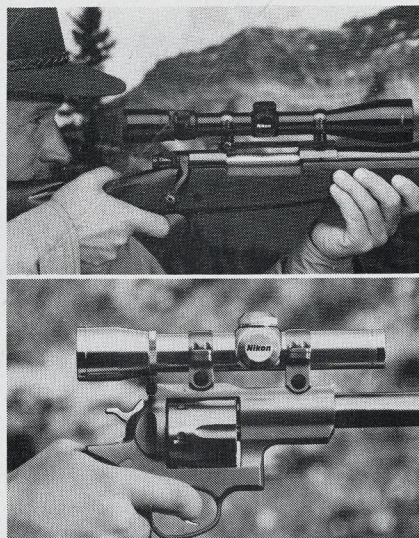
Set the washing machine for warm-water wash and rinse cycles—never hot water—and select the highest water level available. Add the soap or detergent in accordance with package instructions,

and make certain the soap is completely dissolved before loading your sleeping bag or coat. Completely submerge the bag or garment, pressing out all trapped air. Distribute the weight as evenly around the drum as possible, and stay available to rebalance the load if the washer sounds an alarm or if it vibrates excessively during its spin cycle.

Move the damp piece to the dryer as soon as possible after it's washed, to prevent wrinkles from setting. Use the dryer's cool, fresh-air mode—not a potentially damaging heat cycle. Since down dries extremely slowly under any circumstances, a vest or jacket may well need two complete drying cycles, and a sleeping bag may need three. Resist the temptation to rush the drying, however, because down invariably mildews if it isn't thoroughly dry. Leave the piece in the dryer until it feels bone dry, and then give it another 10 or 15 minutes as insurance.

Strange as this may sound, it's an excellent idea to toss a couple of clean tennis shoes into the dryer during the final hour of drying. The sneakers will break up matted clumps of down, fluff the filling, and generate enough static electricity to restore the warmth-giving loft of the down.

ILLUSTRATED BY ED LIPINSKI



Take a look at what makes a Nikon a Nikon.



OTHER WEST

(Continued from page 41)

alternated from plunge to pool through a tunnel of willows and creek dogwood. I saw no sign the stream had ever been fished. I thought it might be barren.

My first short casts with a Royal Wulff dispelled that idea. Native cutthroats with blush on their cheeks and fire in their fight rose up out of the tiny black pools, took

the fly with bold boils, and were heavy when I led them dripping into my hands. They came from a stream so small it should have held nothing but 6-inch trout. These averaged 1 foot long. A couple went 14 inches, and were as pretty as the stream that offered them to me. I declined the offer, returning them to it.

Fly rods chosen to fish the small solitudes of the Other West should be short, 7 to 8 feet long, and balanced with 5- or 6-weight floating lines. If you plan to do

IF YOU GO

■ **Arizona:** The stand-out river in Arizona is the Colorado, which cuts across the northwest corner of the state, then runs the length of its western border. The most famous reach is the 15 miles between Glen Canyon Dam and Lee's Ferry. Rainbows average 2 to 3 pounds, but 15-pounders have been hooked. The river also holds 1- to 3-pound cutthroats. There is a long section of public wading water at Lee's Ferry. The rest of the river can be reached by power boat only. This is a tailwater, and the water level is subject to fluctuation; wading anglers must always be alert to any water level changes. For more information, contact Glenn Tinnin, Dept. FS, P.O. Box 64, Marble Canyon, Ariz. 86036, telephone (602) 355-2267. For lodging information, contact Marble Canyon Lodge, Dept. FS, P.O. Box 1, Marble Canyon, Ariz. 86036, telephone (602) 355-2225.

If your goal is fishing in a quiet setting, consider the White Mountain Apache Indian Reservation in eastcentral Arizona. It contains 400 miles of stream, twenty-five lakes, and lots of campsites. Modest daily use fees tend to reduce the number of users. In fall you might be lonely in this beautiful and wild alpine country. Contact the Game and Fish Department, Dept. FS, White Mountain Apache Tribe, P.O. Box 220, Whiteriver, Ariz. 85941, telephone (602) 338-4385.

■ **New Mexico:** The San Juan River below Navajo Dam is New Mexico's premier trout fishery. It emerges from an irrigation impoundment, so it has relatively stable flows. It is a large river, but has plenty of public and wadable access in its upper 4 miles. A boat or raft will get you into some water in the next 6 miles that you could not otherwise reach. The San Juan is known for its 2- to 4-pound rainbows. There are also some browns up to 10 pounds. For more information, contact Chuck Rizuto, Rizuto's Flyfishing Store and Guide Service, Dept. FS, 807 East Main, Farmington, N. Mex. 87401, telephone (505) 326-0664. For lodging information, contact Abe's Motel and Fly Shop, Dept. FS, Navajo Dam, N. Mex. 87419, telephone (505) 632-2194.

If you'd like some fall fishing that is less likely to be disturbed, try the upper miles of the Rio Grande River, in northcentral New Mexico. There are areas of easy access, more areas where you have to hike down into the deep canyon. The fish won't be big, but the scenery in autumn will be. For more information, contact Taylor Streit's Fly Fishing Service, Dept. FS, Box 177, Arroyo Seco, N. Mex.

87514, telephone (505) 776-8698.

■ **Utah:** The first few miles of the Green River, below Flaming Gorge Dam, might be the hottest reach of trout river in the country. The numbers of trout per mile are staggering, and you'll see lots of fish cruising, working, or feeding during a day's float. But you don't have to float; a hiking trail runs at water's edge in the most popular upper 7 miles. The Green holds browns, cutthroats, and some brookies, but rainbows predominate. It would be a bad day if you didn't hook a 2- to 3-pounder and not a surprising day if you hooked one between 4 and 6 pounds. This tailwater can fluctuate dangerously; caution when wading is mandatory. For more information, contact Westbank Anglers, Dept. FS, P.O. Box 523, Teton Village, Wyo. 83025, telephone (307) 733-6483. For lodging information, contact Flaming Gorge Lodge, Dept. FS, Greendale U.S. 191, Dutch John, Utah 84023, telephone (801) 889-3773.

The High Uinta Mountain Lakes offer excellent hike-in and backpack fishing in early fall; toward October the weather can get pretty feisty. There are around 1,500 lakes as well as dozens of streams in the area. The individual waters are too small to mention, but some exploring will turn up cutts and brookies, at times running 2 to 3 pounds. A map is essential to navigate the trails and find the fishing. The High Uinta Lakes lie in Wasatch National Forest, Ashley National Forest, and the High Uintas Primitive Area. Maps of the three areas are available for \$1 each from U.S.D.A. Forest Service, Dept. FS, Federal Building, 324 25th St., Ogden, Utah 84401, telephone (801) 625-5347.

■ **Nevada:** Pyramid Lake is the best place to fish in Nevada for a chance at a trophy fall trout. It lies 30 miles north of Reno, on the Paiute Indian Reservation. It is a giant, 26 miles long and 5 miles wide. It holds Lahontan strain cutthroats that average 4 to 5 pounds; hundreds that weigh more than 10 pounds are landed every season. The best fishing begins in October and goes on through the winter. Many fish from boats, but despite the lake's size, much fishing is done either wading from shore or from float tubes. You need warm clothes and neoprene waders. Contact Reno Fly Shop, Dept. FS, 294 E. Moana, No. 23, Reno, Nev. 89502, telephone (702) 827-0600. A special tribal permit, available at the fly shop, is required to fish the lake. For tribal fishing information, contact Pyramid Lake Fisheries, Dept. FS, Star Route, Sutcliffe, Nev. 89510, telephone (702) 673-6335.