

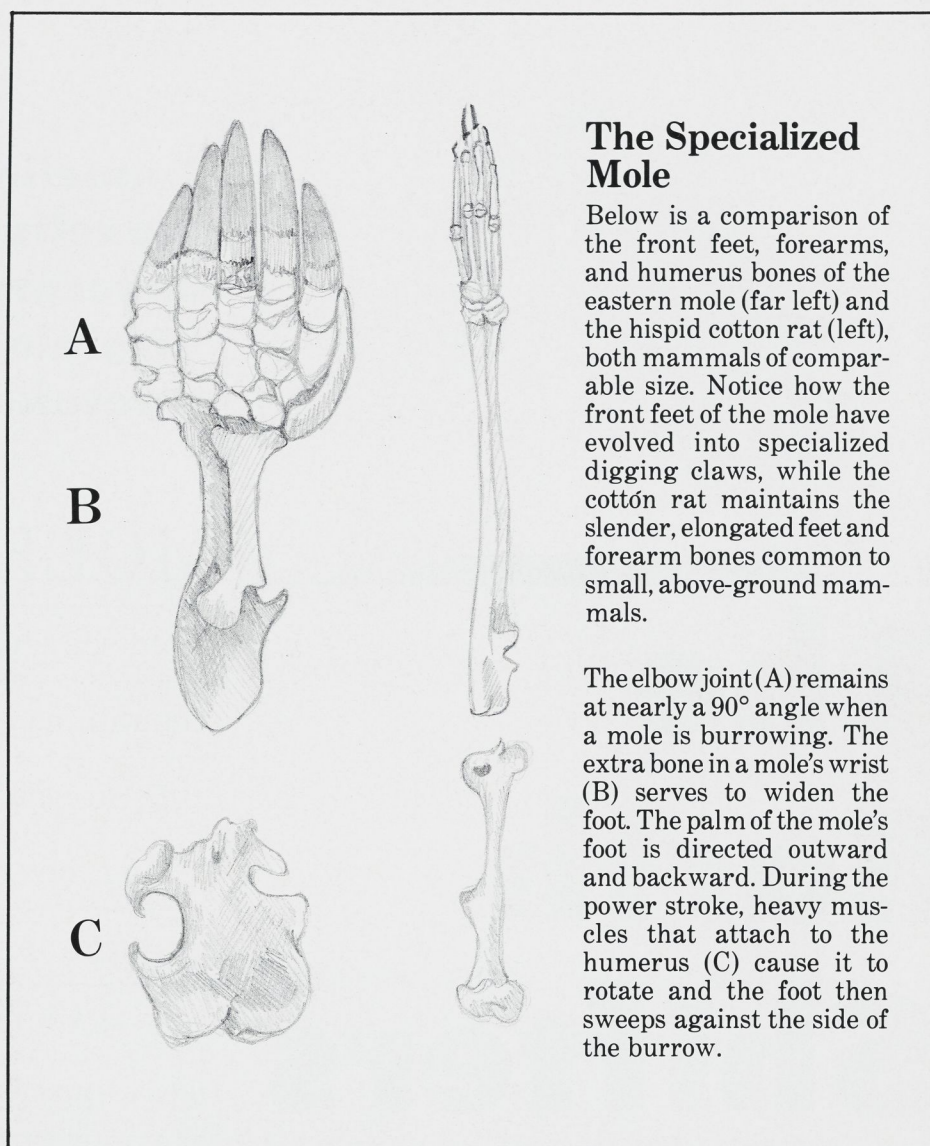
Eyes are a good example of such a trade-off in moles. Vision can be of little use as a means for sensing much about the environment in the total darkness of burrows. Thus, the tiny eyes of moles are remnants of the normal eyes possessed by their predecessors and above-ground relatives. Indeed, their pinhead-sized but complete eyes are probably capable of perceiving little more than shifting shadows.

Even their ears are greatly reduced. In the case of ears, however, hearing is still present, but the external ears, or pinnae, have been lost. After all, they would be of little use in burrows, and perhaps even hinder moles by catching in tunnels and filling their ears with dirt.

An obvious feature of a mole is its hair, which is different than that of most mammals, however. Most mammals possess two kinds of hair, underhair and guard hair. The hair, or pelage, serves a variety of functions. The soft underhair is important in temperature regulation and the longer, coarser guard hairs protect the underhair, and is colorful and important for camouflage. To an animal like a mole that spends most of its time underground, however, camouflage is not too important and the colorful guard hairs are lacking. In fact, most moles have no guard hair at all. A mole's fur is very dense and soft, good for keeping warm, and perhaps more importantly, for easing through tight corridors underground.

A close look at the coat of most mammals reveals that their fur is somewhat flattened, with the tips of the hairs directed toward the tail end. It's that way for a couple of reasons. When a mammal is cold the nervous system sends messages to muscles located in the skin. These muscles contract, pull on the base of the hair, and cause it to stand up. With more dead air spaces, the fluffed-up coat provides more insulation. We humans also have these muscles—we just don't have much hair to fluff up.

There's good reason for a mammal's hair to be directed toward the tail end. For most mammals that live on land, it would be difficult to move forward through vegetation if they had to bend back hairs that were pointed forward. But, it's not that way for moles. With one-directional fur, a mole would have a hard time making a backward escape out of its burrow. Thus, a mole's hair



The Specialized Mole

Below is a comparison of the front feet, forearms, and humerus bones of the eastern mole (far left) and the hispid cotton rat (left), both mammals of comparable size. Notice how the front feet of the mole have evolved into specialized digging claws, while the cotton rat maintains the slender, elongated feet and forearm bones common to small, above-ground mammals.

The elbow joint (A) remains at nearly a 90° angle when a mole is burrowing. The extra bone in a mole's wrist (B) serves to widen the foot. The palm of the mole's foot is directed outward and backward. During the power stroke, heavy muscles that attach to the humerus (C) cause it to rotate and the foot then sweeps against the side of the burrow.

actually lies in neither direction. Better yet, it lies in both directions, and a mole can crawl backward through the burrow as easily as it can move forward.

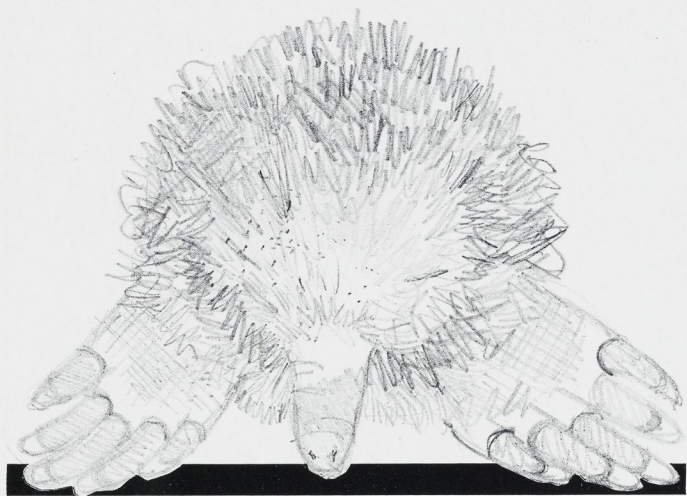
Probably the most dramatic feature of a mole is its greatly enlarged frontfeet. Moles have large and shovel-like frontfeet with broad and powerful claws. They wouldn't make very good hiking boots, but they're great for a mole. As in most mammals that live underground, the length of the limbs of moles are greatly reduced—if for no other reason than they take up less room. Certainly, the longer the legs, the larger the burrow would have to be. And larger burrows mean larger predators, not to mention the added work to build warm nests. But, the main reason that these mammals have short limbs seems to be for leverage.

Imagine having a large-bladed shovel that has a long handle. Imagine also

that in order to use the shovel you had to grip the handle at the end, *farthest from the blade*. Well, if the soil was soft, loose and didn't weigh very much, you could dig a very small trench before you tired. Certainly, if you had to "build a house" in such a fashion, however, you wouldn't have the energy to search for food and water, find a mate, fatten up for the winter, much less escape from predators! So, moles have large, short-handled shovels.

But, here's another example of a trade-off. This remarkably powerful digging adaptation has left the mole capable of little other arm movement, whether it's in its burrow, in water, or even trying to crawl out of your hand.

Most of us know what a mole looks like. But what if you're wandering in the mountains, binoculars swinging from your neck, camera bouncing off your binoculars and you see a short-



The Earth Shifters

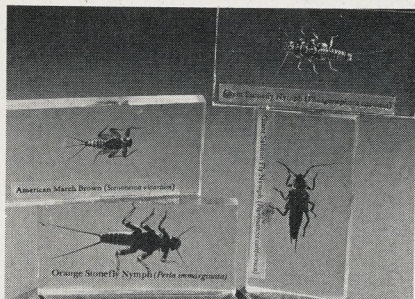
by John F. Pagels

Tunneling, burrowing, shoveling their lives away underground, the moles of Virginia are forgotten caretakers of our soil.

MOLES! They're everywhere—from sea level to the tops of our highest mountains. But, whether we're reveling at the beauty of wildflowers in spring, or snoozing beside a shade tree in summer, we probably won't see one—and they can't see us, not even when they're above ground. Let's take a closer look.

Three species of moles occur in Virginia and all live underground, at least most of the time. Moles possess a wealth of adaptations for their specialized existence. However, as is so often the case when certain functions become highly specialized, others are often nearly lost.

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Fly Lines . . .

after fastening the fly to the stick by jabbing the point into the wood. This does not seem to dull the hook or bend it. Then I bind the leader in place with the rubber band.

I store the finished sticks in round plastic pill boxes that are available at drug stores. I recommend that you locate the containers first, so that you can make the pieces of wood fit the space. Small plastic boxes that are carried by many fly shops also work. I carry about six finished leaders in a box and label them according to pattern and size. Now when I'm on the stream at dusk, I can change flies by simply looping the leaders together. I don't worry about losing my fly, and I've taken some nice trout because of it.

HOWARD ROGERS

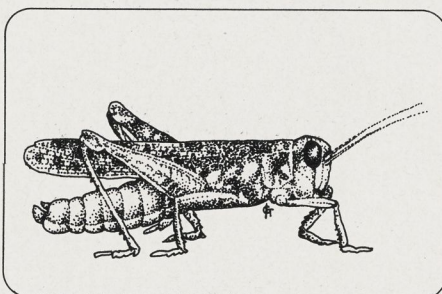


Illustration by Gary Allen

Duplicating Dubbing

As trout become more sophisticated, tying a fly that is an accurate imitation of an insect becomes the goal of most tiers. Most of us can make a dubbing mixture that resembles the body of an insect, but if you happen upon a successful mixture, can you duplicate it precisely in the future? Probably not, if you are like many tiers who mix their dubbing by trial-and-error until they achieve the shade they desire. However, if you accurately measure the quantities of materials used in the mixture and keep a record of them, you will be able to duplicate the dubbing mixture with ease. Loose material, such as fur clipped off a skin, can be measured by weighing it on a powder scale frequently used by handloaders. The unit of measure—1/10 of a grain—represents just enough fur to dub about five #12 dry fly bodies.

Here's how my system works. Mix your dubbing materials, for example cream fox and muskrat, in increments of 1/10 of a grain, until you achieve the color you want. Keep a record of the amount of each material you used, and store the finished dubbing in an envelope labeled with a list of the materials and the amounts of each. Then, if the dubbing proves successful, you'll be able to duplicate it without guessing.

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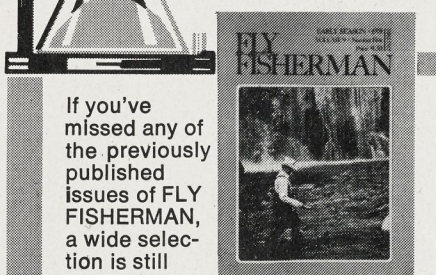
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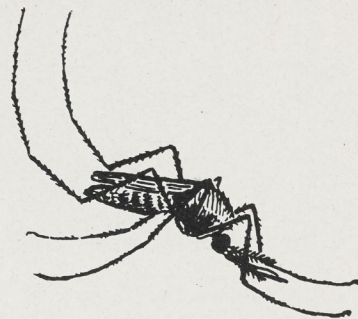
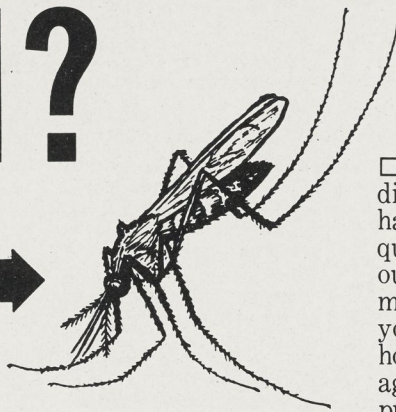
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"MOSQUITO BITES" WHY SUFFER THEM?

THE PROBLEM



What Users Say About E-Z

"I have a seven year old son who is allergic to mosquitoes. He has taken oral vaccine unsuccessfully and injections from the doctor on a weekly basis were little better. Now with E-Z, for the first time in his life he can enjoy the summers and not worry about mosquito bites. We took E-Z to our doctor and he said they were perfectly safe to use and that he had heard they were very good." **D.S., Silsbee, Texas**

One word describes these E-Z Oral Tablets, Fantastic! **D.R.S., Mission Hills, Ca.** The result is quite astonishing! Not a single bite was noted. Used them in Norway, fishing. **H.B., Switzerland**

I am extremely sensitive to mosquito bites, but since taking E-Z I am happy to report that I have not been bitten once, even though I have been repeatedly exposed. **G.M., Long Beach, Ca.** My son and I have had trouble all our lives with mosquito bites. Drs. couldn't help. Now that we take E-Z we are able to go outside and not be afraid. God Bless your firm. **Mrs. E.M., Calumet City, Ill.**

Your pills have made it possible for me to be outdoors without worries. **S.B., Stanton, Ca.**

I've talked to 6 campers today, and they all say your E-Z pills really work; not a single bite! **H.A.H., Garden Grove, Ca.**

Used E-Z, I am impressed with the results. You've made a great break-thru for the outdoors person! **D.S.A., Belmont, Mich.**

These pills work so well, I have to give your address to everyone that tries them! **C.W.S., San Antonio, Texas**

E-Z has saved our lives! This is the first summer that we have been free of mosquito bites. If you want proof that E-Z works, we are prime examples! **Mrs. R.S.S., Abilene, Texas**

While others swabbed themselves with fly dope, smelling and feeling icky, we took two tablets and suffered much less than our companions. **B.R.P., Bedford, Ma.**

□ **ALL OF US KNOW...** the complete discomfort and apparent helplessness we have when confronted by swarms of mosquitoes every time we try to enjoy the outdoors. Even though its only the female mosquito who attacks you (to secure your blood to use for producing eggs and hordes of more mosquitoes) your defense against them is very limited unless you protect yourself.

There are many products on the market from protective nets, special clothing, messy and odorous sprays, smoking lamps and other devices, but none of these are as simple as taking a pill.

THE SOLUTION



Córdova Laboratories markets a vitamin size tablet which when taken orally by people provides a systemic chemical which emits an odor through the pores of the skin that mosquitoes detect immediately and avoid you... *hence no bite!* This same odor however cannot at all be detected by humans so *therefore you yourself do not offend anyone by taking the pill!*

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the surface to take food (and artificial flies, too) in the usual way. Towards and in the tail of the pool, where the depth decreases considerably, grayling lie on or near the stream-bed.

In the third case the grayling lie in the deep pool below the waterfall of a mill-dam. The long pool gets narrower and widens between rocky walls; here, in addition to those fish which are in mid-water (or lie at the bottom), at times some medium-sized grayling lie along the pool's edge a few inches from rocky side-walls; there fish are 'on the fin' even as near to the surface as a feeding trout.

To conclude, in my opinion based on my experience, you can find the grayling 'on the fin', but as an exception and under well-determined circumstances. The determining factors appear to be a remarkable depth of water, a shortage of feeding zones, and, relatively, an abundance of fish.

Antonio Sabbadini

Udine, Italy

Call in the Boy Scouts

I SYMPATHISE with Taff Price's problem when faced with an order for my Daddy-long-legs pattern. In choosing flies for my series, I do try, as far as possible, to consider the professional fly-tyer, but inevitably, some patterns involve a good deal more trouble than others. The professional has the choice of two courses; either he can tell his clients why a pattern like a Daddy, or the leaded Mayfly nymph, has to be priced well above average, or he can accept a loss on the complex patterns which he can more than make good on the simple ones, like Chompers, Green Partridge, and the like.

However, perhaps Taff might like to adopt my own method for obtaining double-knotted pheasant tail fibres for Daddies. An eleven-year-old Boy Scout knocked at my door some years ago, during Bob-a-Job week. He made his own price for knotting pheasant tail fibres and went away with £1.50. I have now enough of these knotted fibres to last a lifetime. Perhaps Taff can find a nimble-fingered child who will enable him to offer Daddy-long-legs imitations at the right Price.

Richard Walker

Biggleswade, Bedfordshire

Ireland has much to offer

ON READING recent reports in the "Irish Column" and comments in the letter pages, one might come to the conclusion that Irish trout fishing is "done for". I do not share the view that it has yet reached that stage. I first fished in Ireland in 1961 and have done so each year since. Certainly there are problems of pollution on several rivers and some loughs, and in particular a disgraceful situation of urban sewage pollution on a once-famous brown-trout lough, but these affected waters are still a very small proportion of the total brown-trout fishing available.

The Inland Fisheries Trust, who are responsible for the management of much of Ireland's waters, have in my opinion made very considerable improvements to the fishing they control over the past few years (and whose staff incidentally must surely be the most friendly, helpful anywhere, to the visiting angler).

Trout fishing in England in recent years has been greatly enhanced by the provision of well-managed large new reservoirs, and one can hardly beat a good day at one of them for quality of fish, but there is still their equal in Ireland given the same degree of skill and luck, and where the actual cost of the fishing is nil or almost nil, in beautiful surroundings, where the trout look up to an abundance and variety of fly life that English reservoir trout have never seen the likes of.

Let us hope that all pressure be brought to bear on the polluters and those public bodies who seem to condone such

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We test every item we sell, and reject most of the tackle we try. So if we sell it to you, you know it is GOOD.

TIP FOR NOVEMBER

Before you tie a fly, examine the eye of the hook carefully. If it is not closed properly, reject it — the nylon will fray at the knot. And when finishing the head, do carry the thread over that join in the metal to help prevent any chafing later. (If you use our hooks this will not be a problem!)

OFFER FOR NOVEMBER

Heard of **polypropylene**? We think it is time we took an **honest** look at this material. It is a man-made fibre. It is lighter than water. These two attributes have been magnified in advertising so that some fly tyers now think it is the solution to all dubbing problems. We submit that **it is not**. We have been looking at this material now for three years, and we have come to the reluctant conclusion that it might be a poor material for any fly! (Reluctant because we could be making a profit out of it!) But we have satisfied ourselves that we actually catch FEWER fish on flies with polypropylene bodies, than we do on flies with bodies of two other materials, seal's fur (which is a devil to dub) and Yorkshire Flybody Fur (which is a dream to dub, or to wind).

We agree that poly is lighter than water. Its specific gravity is 0.96. Which is a technical way of saying that 96 lbs of the stuff will just support 4 lbs of weight in the surface film. Or that a size 2/0 body might just support a size 18 hook! And we think that the floatability of a dry fly depends far more on the "prickliness" of the body material and its grip on the surface tension of the water. So that the finer and more pliable the body dubbing, the less well the fly will float. The same rule applies to hackles, of course. And all the polypropylene we have examined has one grave disadvantage — it has a glittery smooth surface to each fibre. And natural fibres do not glitter at the range of a fish's eyeball. Some of them have a sheen, but we have not found any which glitter.

So we looked around for a substitute for seal's fur. Not that seal's fur is not a superb body material, it is, but it usually involves tacky wax, or silly special tools to twist threads together, hopefully with the fur trapped in the coils. We found a man-made fibre, surface treated to remove the glitter but to leave a sheen, long in the staple so that it is delightfully easy to dub, in a wool form so that it can be simply wound on large bodies, tolerant of picking out as much shagginess as you like with a dubbing needle, about the same thickness and spring as seal's fur. We then found that we could dub a body in less than half the time, and tests showed that the fish could not tell the difference. On dry flies, wet flies, or nymphs. But they could with polypropylene, so we do not sell it as dubbing. If the time ever comes when we find a type of poly which satisfies us that it will fulfil all the promises so far made for it, then we shall offer it to you with a clear conscience.

For November only, we offer a pack of 24 colours of Yorkshire Flybody Fur, on cards of 5 yards of a colour, post-free, by return, for £3.50, incl VAT.

CATALOGUE

You may think that this advert is a bit blunt. In Yorkshire this bluntness is just called **honesty**. And honesty runs through our catalogue. We tell you about the things we do not sell, almost as much as the things we do. With a colour section showing you the full range of Flybody Fur, and Pearsall's Gossamer. With a fishing tip on every page. With a money-back voucher if you order anything from us. With quizzes to find out how good an angler you are. With a casting lesson, and fly tying lessons. All for 50p, post-free, by return. You really cannot afford to be without this bargain. Remember, you have a winter of fly tying to get ready for, and your tackle to overhaul before many prices go up next year. And your wife may be looking for **hints for Christmas**, so mark our catalogue and leave it lying around!

RODS

A few people think that a fishing rod is a rod is a rod. But it isn't. A stick cut from a hedge would do, after a fashion, but how much pride would we take in one of those? (We noticed the other day that most tree branches have one of those magic compound tapers!)

So when we designed our range of carbon fibre rods, we ended by designing in a bit of **pride**. Pride for us to sell it, knowing that it is the finest rod we can humanly offer. Pride for you to use, knowing that the finish will draw glances from your friends, and your casting will be effortless. (But that's up to you, of course — some anglers make it look like hard work with any rod, but this is not necessary with one of ours.)

If you would like a completed rod, with its high-quality reliable reel fitting, whipped in green with red edgings, a lustrous varnish finish, a comfortable cork handle, in a bag and in a case, with your initials in gold-coloured letters on the rod and on the case, why not telephone us to talk about it? We welcome orders on Barclaycard or Access over the telephone.

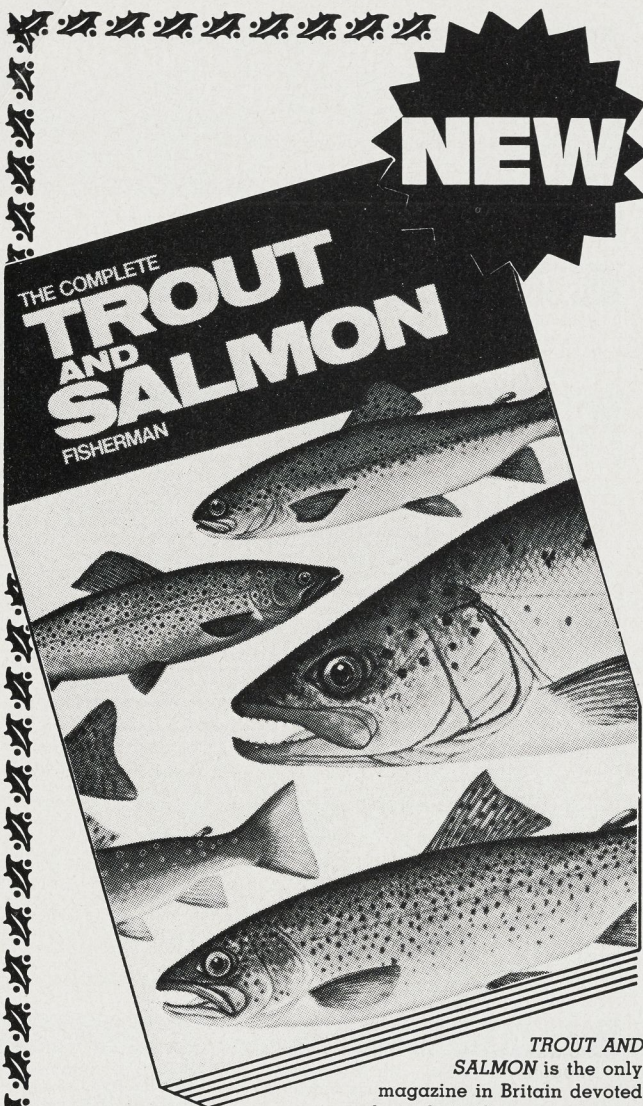
On the other hand, you may wish to take advantage of being able to whip the rings on for yourself, and put some varnish on the whippings — not at all difficult, and you save a bit on the cost, and some of the pride of workmanship is your own. Why not telephone us to discuss your particular ideas on rings, reel fittings, and so on?

One thing we do promise. If you are not absolutely delighted with your rod when you receive it, and you return it to us, you will receive an **instant refund** of your purchase price. We have had only one of these in three years, and we got our wires crossed a bit on that one, because he bought a different rod from us a month later. For full details please see our advert in last month's issue. If you have had our catalogue for more than two months, please send us a SAE for our newsheet of alterations and additions to our catalogue.

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TROUT AND SALMON is the only magazine in Britain devoted exclusively to the sport of game fishing with rod and line for salmon, sea-trout and trout, and since it was founded in July 1955 it has achieved a wide readership among all serious game anglers — not only in Great Britain but in many other parts of the world — who are eager to improve and develop their skills as fly fishermen. Over the years, articles have been contributed by fly fishermen whose knowledge of the sport and expertise with rod and line have made them eminent in the world of game fishing. They have written with perception, conviction and wit on every practical and theoretical aspect of fly fishing. This selection of articles from the first twenty-one years of *TROUT AND SALMON* contains a wealth of information: the way to fish under every conceivable type of water and weather; the tackle best suited to a variety of needs; the flies likely to bring the best results whether on still or running water. These are subjects vital to all game fishermen and are among those discussed in detail in these articles.

This superb book is published by David and Charles and contains 198 pages and is casebound and jacketed. PRICE £5.95 from your bookseller, or post free using the coupon below. (Available UK and Republic of Ireland only).

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Letters

behaviour, and that a more enlightened approach appears in the near future in the planning and execution of arterial land-drainage schemes, for here surely as much damage is being unwittingly done as can be attributed to pollution.

Finally, the Government, in the light of experience gained from past failures in other industrial countries in Europe (and the danger signals now flashing in Irish home waters), should have the good sense to halt the destruction in time, for Irish trout fishing in general is still as good as anywhere else in Europe. Long may it remain so!

John Logue

Saffron Walden, Essex

A much-travelled corixa

PERIODICALLY, discussions arise concerning the methods by which freshly-excavated pits quickly become inhabited with many forms of life. I recently witnessed a most surprising incident.

A consignment of fencing panels, individually wrapped in black polythene sheets, were stacked flat on my driveway such that when it rained three days later shallow pools were created. A further two days later when I removed the top panel I noticed a disturbance in the puddle on the underlying panel. Further examination revealed a fully-grown corixa which when transferred to a more suitable container proved to be in perfect condition.

Readers who have previously found the "spawn on ducks legs" transfer theory implausible might like to consider how this creature survived a 7- to 10-day journey over 200 miles, on fence panels which had been freshly creosoted and stacked vertically on the back of an open lorry?

David Jones

Comberton, Cambridge

Salmon before he had started!

BEFORE starting to fish for salmon in the Dee, near Corwen, North Wales, I volunteered to show a friend who had never held a rod in his life how to cast with a fixed-spool reel. I made a demonstration cast and as the Devon Minnow hit the water a salmon took it. In some five to six minutes I safely grassed it; 11 lb. My colleague thought that salmon fishing was easy. Needless to say he persevered for almost six hours after this incident without success.

I have been fishing for salmon for over thirty years but have never experienced such a quick take.

Leslie B. Williams

Liverpool

Too many small fish

AS THE FIRST season at Bewl Bridge comes to a close, I feel it necessary to voice my opinion regarding the success, or failure, of this beautiful Kent fishery.

No doubt, the Southern Water Authority see Bewl Bridge to be the showpiece of their trout waters, and at first sight there is no doubt they are right.

However, when we consider what has happened through the season, the sweet taste of success begins to turn somewhat bitter. In order to get Bewl Bridge "off the ground" the fishery was "over-stocked" at the beginning of the season. Since then the continuous stocking of small fish has ruined the balance of the reservoir completely. Now (late August) when we would expect to be catching larger fish in excellent condition we are still catching stock fish of poor quality averaging well under a pound a time.

Indeed, in recent weeks black fish have been caught, a sight that we would not expect to see after May. These poor-quality

Continued on page 25

Trout and Salmon