

**NEW**

# THE WATER GARDENER

MAY 1993

VOLUME 1 NUMBER 1



- Create your own water garden ● Water lilies ● Handy hints ● The oriental touch ● Pond doctor ● A-Z with an expert ● Exciting competitions

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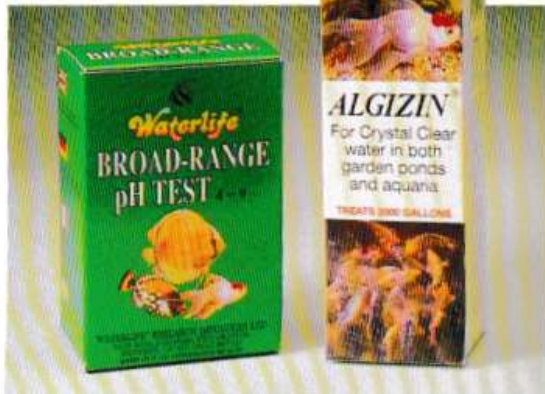
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# THE WATER GARDENER

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THE WATER GARDENER MAY 1993

## WELCOME

In the early 1980's, very few garden centres had what one could call a genuine department dealing with outdoor aquatics. Today, 60-70% of all garden centres take pride in offering ponds, pond fish, water lilies, marginal plants and anything and everything else that conceivably can be associated with this spectacular form of gardening.

The great thing about this 'blossoming' of interest is that it shows no sign of abating. On the contrary — the general consensus is that the trend will continue and that, in a few years' time, no garden centre will be able to regard itself complete without a fully fledged water gardening section.

Every passing season brings its crop of exciting innovations, from new varieties of water lilies and marginal plants to the latest tools designed to help bring spectacular success to anyone who decides to take the plunge.

As water gardening expands, so does the need for appropriate advice and information, of course. To their immense credit, garden centres and aquatic shops up and down the country are responding admirably to the challenge — so are we at *The Water Gardener*.

Our brand new magazine is the very first publication of its kind available in the UK. Its aim is to cover every aspect of water gardening, from a colourful, lively approach to the *A-Z of Water Gardening*, to more detailed guides for creating and maintaining your own pond, water garden and decorative aquatic features, to choosing, buying and looking after pond fish and plants ... to any and every other aspect of this stunningly beautiful and pleasing leisure activity.

Whether you are completely new to water gardening, or whether you are an experienced practitioner, it is our fervent hope that our lively, refreshingly attractive style, provided by a team that includes the very best writers and experts in the field, will appeal to you and will help fulfil your ambitions.

We therefore bid you a warm welcome to this free introductory issue of *The Water Gardener*. If you enjoy it, please write to tell us so. If there is something you would like us to consider for future editions, then please do likewise. Whatever your views and opinions might be, we'd love to hear from you. We are confident that, together, we can produce the magazine we've all been waiting for.

We look forward to your valuable support.

John Dawes  
editor

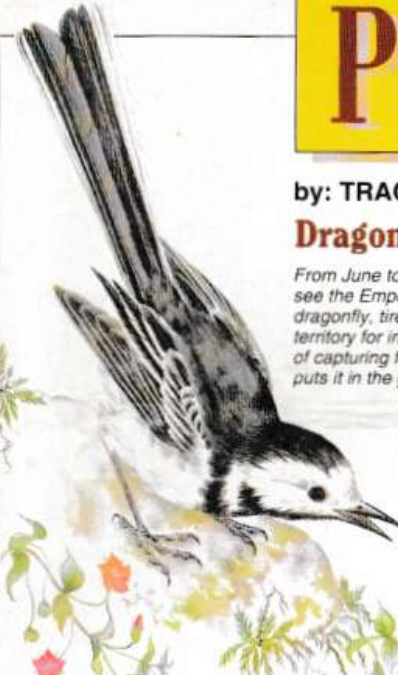


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# POND DIPPING

by: TRACEY MORLEY

illustrations: KEVIN MORLEY



## Pied Wagtail

Smart black and white plumage and non-stop antics make the Pied Wagtail an easy bird to recognise. Attracted to the pond by the abundance of midges and other insects, it trots, runs and leaps in pursuit, stopping frequently to bob its tail up and down.

The Wagtail's most distinctive call is a sharp 'chizzick'. It will nest readily in the garden, making use of any convenient cavity, such as a hole in a wall or a bank.

## Dragonflies

From June to August you may see the Emperor, our largest dragonfly, tirelessly patrolling its territory for insect food. Its habit of capturing food in mid-flight puts it in the group of

dragonflies known as hawkers. The other group, darters, dash out for prey or to chase off rivals before returning to resting places on waterside plants.

Depending on the species, the female lays her eggs in mud, plants or free-floating in the water. The young, called nymphs, feed on tadpoles or insect larvae which come within striking distance of the vicious hooks on their lower jaw.

The nymphs may stay in this larval stage for several years before crawling out of the water onto plant stems. If you are lucky, you may see one burst out of its skin to emerge as a shimmering adult.

## Pond Snails

Even if you don't introduce water snails deliberately, they often arrive on aquatic plants. Although they eat decaying vegetation and help to control algal growth, snails also feast on tender foliage, so their worth is doubtful.

Of all the snails, the Great Ramshorn is probably the least destructive. You can recognise it easily by the flat coiled shell. However, beware of the Great Pond Snail! Its conical shell is up to 50 millimetres in length, and it gorges fish eggs and fry, as well as vegetation.



## Pond Skater

Slender-bodied and about 15 millimetres in length, this



creature appears to glide effortlessly over the water's surface. In reality, its middle legs work hard to propel it, with the back legs acting as rudders. Water-repellent hairs on the Pond Skater's underside ensure that it stays dry.

Although their eyesight is good, Pond Skaters usually detect food by vibration, and use their front legs to seize prey. They will wait patiently for insects that have had the misfortune to fall into the water.

## Three-spined Sticklebacks

The three sharp spines along its back give this fish its name. Its elaborate courtship and breeding rituals make the Stickleback a fascinating addition to a wildlife pond.

In spring, the female remains a drab silver-green, but the male develops a brilliant red throat and belly and bright blue eyes. He builds a nest with vegetation at the bottom of the pond.



## Create your own wildlife refuge

It's very easy to make your garden pond a safe haven for frogs, toads and newts... and all manner of other aquatic creatures. Here are six useful tips:

- 1 Provide shallow shelves around the edge of the pond for spawning frogs.
- 2 Stock the pond with water and marginal plants for toads and newts.
- 3 Create hiding places with stones and logs.
- 4 Provide plenty of cover with poolside vegetation.
- 5 Leave some grass to grow undisturbed for froglets and toadlets.
- 6 Don't use insecticides which could poison wildlife.



Watch out for a full-length colour feature from Tracey and Kevin Morley on all our favourite native amphibians in the next issue of *The Water Gardener*.

# PondClear

## CONTROL GREEN ALGAE WITHOUT HARM TO FISH, PLANTS OR WILDLIFE

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- Pondclear Model 15:** For ponds up to 3000 gallons — 13650 litres. Maximum flow rate 750 gallons per hour — 3400 litres per hour.
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# WATER LILIES — THE PO

With their lustrous waxy rich colouring, these  
Philip Swindells guides you thro



Top left, 'Fulgens' — one of the reddest of all reds. Above left, *N. marliacea* 'Carnea' is an attractive vigorous grower. Above centre, the spectacular 'Chromatella' water lily — one of the 'older' types, but still hard to beat (photograph

**W**ater lilies are the loveliest of aquatic plants. They are beautiful and exotic with handsome floating foliage and waxy blossoms in almost every colour imaginable. They are also very hardy, easy-going and available in a diversity that enables their waxy star-like blossoms to be enjoyed equally by the enthusiast with a tub on the patio, as by the gardener with a lake in rolling parkland.

Water lilies are, botanically speaking, known as *Nymphaea*, not to be confused with the duller pond lilies or *Nuphar*. These latter are frequently seen in the quiet backwaters of rivers, and have extensive pale green floating foliage and small globular yellow blossoms with a strong aroma of alcohol. Their only advantage over true water lilies is their ability to tolerate moving water, conditions which water lilies abhor. Otherwise, they

are inferior in every way and should never be considered for the decorative garden pool.

#### Smaller varieties

Not that a pool is necessary in order to grow *Nymphaeas*, for there are pygmy varieties which can be grown without difficulty in a half barrel or sink. These are completely miniature replicas of conventional water lilies and will grow and

# POND'S FLOATING JEWELS

gorgeous gems are a must for any pond setting.  
gh the tantalizing choice of types.

Photographs — unless otherwise indicated — by John Dawes.



reproduced by courtesy of De Plomp BV, Pijnacker, the Netherlands). Above right, one of the most attractive of the tropical varieties — 'Blue Beauty' — complete with resident free frogs, photographed at Stapely Water Gardens.

blossom in as little as 6in of water.

All these miniature lilies have the prefix *Nymphaea pygmaea*, *N.p.* 'Alba' being the tiniest water lily imaginable. The individual blossoms are scarcely larger than a penny piece, while the leaves would struggle to attain the size of a fifty pence. This is a wonderful little plant for miniature aquascapes.

The bright canary-yellow *N.p.* 'Helvola' is the most widely planted dwarf, mainly

because it flowers very quickly after planting. Apart from its beautiful starry blossoms, it also bears striking green and mahogany-blotched foliage. There is also a bright red miniature called *N.p.* 'Rubra' and a scarce pink kind, *N.p.* 'Johann Pring'.

Small-growing water lilies are dominated by the Laydekeri group, a handsome collection named after the son-in-law of the greatest water lily breeder of

all time, the Frenchman Joseph Bory Latour Marliac. *Nymphaea laydekeri* 'Alba' is pure white with a fresh tea fragrance, while *N.L.* 'Fulgens' is the brightest red. Then there is the deep pink *N.L.* 'Rosea' and the appropriately named *N.L.* 'Lilacea'. All prosper in 12–18in of water and have a modest spread.

Among the smaller-growing kinds, there are some interesting changeable varieties. These have blossoms which



Some UK water garden centres, such as Stapeley Water Gardens, own magnificent water lily collections.

Below, this is the variety usually referred to as 'Attraction' . . . but botanists are still arguing about its real name.



## WATER LILIES

◀ change colour with age. 'Aurora' is the best, with flowers that begin cream in bud, but move through pink and orange to red as they mature. 'Graziella' is another free-flowering sort, but the changes in colour are not quite so pronounced.

### Larger varieties

For the average-sized garden pool of, perhaps, 6 feet by 8 feet, the Marliac hybrid water lilies are to be preferred. Those prefixed *N. marliacea* all grow satisfactorily in 18in of water, but will tolerate over 3 feet if necessary. The finest of this group is *N.m.* 'Chromatella', an old yellow variety, but one which has yet to be surpassed. This variety flowers freely throughout the summer, with large star-like blossoms nestling among bold olive-green foliage which is splashed and stained with maroon.

The other important Marliac hybrids have plain green leaves, the snowy white *N.m.* 'Albida' being set off perfectly by the verdant floating pads. *Nymphaea marliacea* 'Carnea' is the most vigorous of this group, its large apple blossom pink flowers being quite capable of gracing a large pond or lake. So could 'James Brydon', an American hybrid with distinctive peony-shaped flowers of deep red.

'William Falconer' is another good hardy red, but this prefers shallower water, along with the icy white 'Hermine' and deep purple-red 'Atropurpurea'.



Pygmy lilies can be planted in the tiniest of containers. This is *Nymphaea pygmaea* 'Helvola'.

### Tropical lilies

There are tropical water lilies too, but these are rarely grown in our cool sunless climate, although some gardeners obtain reasonable results from their cultivation in half barrels in a conservatory or sun lounge.

'Daubeniana' is a small growing blue for a tub or aquarium, while 'Blue Beauty' is well suited to those who have an indoor pool. If you are looking for something really sophisticated, then try 'Red Flare' one of the most beautiful of the night flowering varieties.

### Basic needs

Water lilies have to be grown in a good soil mixture if they are to prosper, whether that be placed directly upon the tub or pool floor, or in a container. Choose a properly formulated aquatic planting compost or else a heavy garden soil devoid of extraneous organic matter

and not recently dressed with artificial fertiliser.

Lilies also require summer feeding with an aquatic plant fertiliser placed directly in the soil next to their roots, and regularly lifting and dividing every few years in order to maintain their vigour and flower quality. ■

*Philip Swindells is an aquatic consultant specialising in arboreta, botanical and historic gardens worldwide. He is also the Registrar of the National Water Lily Collection.*



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# POND DOCTORS

## Koi highs and lows

**Q:** I bought some small Koi a couple of years ago. They have done very well, seem healthy, are nice and fat and are always ready for their food.

However, a visitor remarked that they were not good fish. What did he mean by this?

**A:** Nikishigoi, to give them their proper name, were derived from Common and Mirror Carp (*Cyprinus carpio*). From these ordinary looking fish, many sorts were developed, and these can contain almost every colour in the spectrum. The Japanese



BARRY JAMES

This beautiful fish with Mirror Carp scaling is known as a Shusui.

then created a system of naming Koi according to their colours, patterns and body shape. Standards were established and shows are held regularly where conformity of fish to these standards is judged, and prizes are duly awarded.

Before shipping from the nurseries or hatcheries, fish are graded according to excellence, with the best fish, obviously, fetching the highest prices. Top-quality Koi can cost many thousands of pounds.

I suspect that what your friend was implying was that your fish are low-grade Koi. However, the main thing is if they give you pleasure, that is all that counts. Some of my own favourite fish wouldn't rate a glance on the judges' bench, but I like them and that's what is important.

## Pre-filter or filter

**Q:** When I bought the pump for my pond, the dealer recommended that I also acquired a filter. However, my

During my thirty-odd years in the aquatic industry, I suppose I have dealt with most of the problems confronting the aquarist, pondkeeper and water gardener. The majority fall into predictable categories and can be answered without difficulty.

Occasionally, however, my postbag turns up something completely new. Sometimes, the solution comes in a flash, but often, I have to start delving into my library or ring around my peers to try and find an answer.

Occasionally, I am open-mouthed in amazement at some of the crazy things people do. For instance, some years ago, a builder friend of mine bought a new house. The bottom boundary of the garden comprised a vertical rock face, so he built a pond at the base. He then got one of his workmen to chisel a waterfall, serpentine fashion, from the top of the cliff down to his pond. He was amazed and disappointed when the water succumbed to gravity and took the direct route to the bottom, rather than flow round the intricate pattern the workman had carved for it!

The moral of this story is that when you are faced with a problem in a field unfamiliar to you, ask somebody who knows; it could save you time and money. And that's what we are here for. Don't hesitate to write to the *Pond Doctors*; we are here to help. Please enclose a stamped, addressed envelope with your query.



BARRY JAMES

returned to the pool. This process takes care of suspended organic and inorganic matter.

To guarantee water clarity, a further device is desirable. This is called an Ultra-Violet sterilising unit. Generally mounted on top of the filter, U-V units destroy micro-organisms, including the free-floating algae which cause the water to go green.

## Killer limestone

**Q:** I live in the Cotswolds and I have a lot of nice pieces of Cotswold stone which I intended to use as an edge for my new pool. However, a friend has told me that the lime will kill my fish and plants.

Is this true? If so, what kind of rock should I use?

**A:** The Cotswolds is made up largely of Oolitic limestone. Many other areas of the country also contain limestones of varying types. All produce some of the finest material for use as building stone and rocks for landscape gardening.

Your friend is confusing the slaked lime used in cement, with limestone. Slaked lime is produced by heating limestone to a high temperature, the resultant material being highly caustic and causing damage to fish and plants.

Limestone is made up of the carbonates and sulphates of calcium and magnesium and is harmless. However, many limestones are too soft for garden use, and will disintegrate when exposed to frost. One should get expert advice before buying or laying down large quantities, as it can be an expensive mistake to make. Your local drystone wall builder will be able to assess the suitability of your stone.



LOTUS

Pre-filters (as shown in two of the three models in this picture) help protect the pump motor against damage from inflowing 'foreign' matter.

pond has always been murky.

When I visited another establishment, the dealer said that what I have is a pre-filter not a filter. What is the difference?

**A:** A pre-filter generally takes the form of a large block of open-cell sponge. This is mounted on the inlet of the pump. Its function is to prevent the intake of detritus which could possibly foul up the impeller.

Filters are often open large boxes mounted outside of the pool. They contain various filter materials, such as sheets of

sponge, brushes, and plastic or ceramic media. Dirty water pumped from the pool into the filter, is cleaned and then

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### Limping Mallard

**Q:** I have a two-year-old Mallard Duck which has been limping for two weeks now on its left foot, and there is a swelling on one of its toes which is slowly getting bigger. Is this serious?

**A:** Probably the commonest cause of lameness in captive ducks is a foot infection. Small pools quickly foul from duck excrement, and so, the ducks will be swimming with their feet in a bacterial soup!

Any cuts or abrasions on the toes, legs or webbing will allow an infection to establish. In severe cases, the infection may be in the bone, causing an osteomyelitis which may show as

## POND DOCTORS

Water gardening is a hobby with infinite variations. One might, for example, be a standard garden pond built as a focal point and, invariably, inhabited by a few common Goldfish. Another may be a natural pond offering refuge to our native amphibians and insects. A third may be a Koi pool designed to show off its inmates at their best or it might even be a mini-lake providing a home for ornamental waterfowl.

All these water gardens contain animals, and some include plants — and that's where we come in. We hope that through this page we will be able to answer your questions relating to the health and welfare of your pond inhabitants, whether they be fish, plant, amphibian or fowl, and in addition to help you to begin to sort out any problems that may arise. Where appropriate, we may expand and develop certain points and themes that may arise from your questions and which we feel will be of benefit to the readership as a whole.

To many people, the crowning glory of a pond is a shoal of healthy fish swimming serenely among aquatic vegetation. The obvious way to start to own healthy fish is to buy healthy fish at the beginning, which leads me — quite appropriately — to my final, query.



a swelling.

Another possibility is an abscess. This would be likely to need surgical removal, as bird pus is very thick and impossible to drain off by lancing the abscess. Less likely possibilities are a fracture (although this may occur in bones weakened by infection) and tumours (unlikely, considering the age of your

duck).

Take your duck along to your vet, as antibiotics will probably be needed and he/she will be in a better position to judge which of the above it is. In the meantime, if you can, make sure that your duck has access to clean water and that there are no rough surfaces on which it may be damaging its feet.

### Skin disease that plagues a Mirror Carp

**Q:** Last year I bought a Mirror Carp for my pond. I now see that it has developed several growths on its skin. The growths are smooth and white, and the fish does not appear to be ill. Is this some form of cancer?

**A:** The growths your Mirror Carp is suffering from are almost certainly due to Carp Pox, a viral infection which can affect all carp-like fish. Classically, these 'growths' appear almost like blobs of candle wax stuck on to the fishes' skin.

The good news is that the disease will probably clear up of its own accord as the water temperature rises; secondly, it is not a fatal disease, although, occasionally, it may cause deformities in young fish.

The bad news is that it is likely to recur during the winter months and that other carp-like fish in your pond may become infected, including Koi, Goldfish, Tench and Orfe.

I would imagine that you bought your Mirror Carp during the summer when it was showing no signs of the disease.

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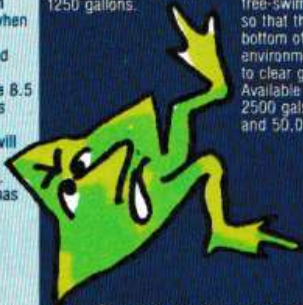
**2 ADD pH Adjuster for Alkaline Ponds** if necessary sufficient for 1250 gallons.

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Gerald Sharp and his wife Jean and a fellow enthusiast.

## *Private poolside havens*

# KINGFISHERS AND WATERFALLS IN THE SHADOW OF LONDON

A love of water gardens from an early age inspired photographer Gerald Sharp to create an impressive aquatic haven with the help of his wife and two firemen — amongst others.

**I**n a 1930's mock Tudor house in a middle class suburb bordering Epping Forest, but only 17 miles from the centre of London, you will find Gerald Sharp — official photographer to the Mansion House — a quite extraordinary water garden enthusiast, and his wife, Jean.

Gerald's love of ponds and the life therein began as a child when a kindly neighbour helped him make a small garden pool to house his collection of sticklebacks and newts.

When he married, over thirty years ago, he was able to carry out his ambition to create, in his own garden,

two large ponds spanned by a wooden bridge flowing into a stream that provided a bog garden.

This generated an absorbing interest in water-loving plants. First came the mighty *Gunnera manicata* (Giant Rhubarb), then the lovely *Lysichitum americanum* (the Skunk) ►



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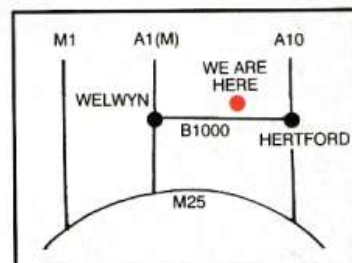
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## Private poolside havens

◀ Cabbage), Candelabra Primulas, Bamboos, grasses, ferns, and the rare Himalayan Orchid.

The fascination of collecting unusual plants led to regular visits to the local aquatic plant specialist where Gerald and Jean became frequent luncheon guests of the owner, Charles Perry, and often met his sister, Frances, the well known author of many garden features and books.

Sixteen years on, and the garden was looking quite spectacular, but it was time to move house.

"What a dilemma!" Gerald recalls. "How do you leave behind so much of yourself?"

"Fortunately, Jean is one of those women who feels that fate usually takes a hand, and she was proved right. The new purchasers lived abroad and only wanted the house as a base for holidays, as their children were at boarding school in England. They wanted the garden flattened to make maintenance easy and were very pleased for us to remove all the plants. Surely, divine intervention!"

The new home had housed six nuns from the local Catholic school and was spartan, both inside and out.

Most people would have found the prospect of developing this garden daunting, but to Gerald it presented a very exciting challenge. On two levels, with a drop of 12 feet to the lower lawn, the position and shape of the pond was obvious and, soon, visions of a cascading waterfall arose.

Closer inspection of the neglected garden revealed a quantity of large Sussex sandstone rocks under two feet of grass and buttercups, absolutely right for giving the landscaping of the water garden the natural look that was so essential to Gerald.

"At the time, the firemen were on strike, and we gratefully accepted offers of help from two of these hefty fellows to dig a hole 25 x 20 feet to a

depth of 3 feet. All the topsoil was retained and the clay taken away on a skip.

"The builder engaged to extend the kitchen was requisitioned for the far more important task of pond building. A large load of aggregate was soon on the scene, along with many yards of sand and cement. The cement mixer was quickly in action and, with several willing hands and shovels, the hole was lined: first, a 3-inch layer of aggregate and cement, then heavy duty building wire, topped with a further 3-inch layer of sand and cement."

At the same time, Gerald was constructing the waterfall by placing tiers of sandstone rocks into place and cementing them firmly in position. About two weeks later, when everything had thoroughly dried out, three good coats of isinglass were applied to all surfaces to ensure that there would be no chemical reaction harmful to plants or fish.

"The pond was now ready for filling, and to the delight of everyone, the water was exactly level with the concrete rim in every part. This is so important to the natural appearance of a pool, and can only be achieved by placing a spirit level across from side to side in all directions. Nothing looks worse, in my opinion, than a bare expanse of concrete or liner above







From every angle the garden is a delight to the eye.

The garden and pond areas are filled with well established magnificent plant specimens with colour well set off against the wide range of shades of green.

the water level!

"A heavy-duty Stuart Turner pump was installed behind the pond, a little lower than the water line, from where it would circulate water up and over the waterfall and down into the pool.

"Now we were ready to plant the oxygenating Hornwort in the water, securing the bases of the stems with pieces of brick laid among the retained topsoil which had been replaced in the bottom of the pond. The water lilies were sunk in wire baskets and the Water Hyacinth (*Eichhornia crassipes*) and Water Soldiers (*Stratiotes aloides*) were floated on the surface."

Then began what Gerald saw as the most exciting part of all — the planting of the backdrop which, by using the large mature shrubs, gave scope to create an instant water garden. Gerald, a professional

photographer with imagination and an expert eye for balance, was able to position each plant to advantage. Over the next few days, a beautiful setting evolved.

"The pond is a haven of tranquillity, beauty and added interest to all who see it. Visitors are fascinated to watch us hand feed the tame and greedy Koi, and many are inspired to ask us for advice on how to create a pool of their own."

One young friend, having shown a photograph to the Head of the School in which he teaches, has recently been funded by the local authority to build, with guidance from Gerald, and some of his plants, a lovely pond in the East End of London. The children have, reportedly, been totally involved in and enthralled by the project.

"Jean, with her interest in watercolour painting and cooking, spends many hours on the Yorkstone patio under a large wooden pergola covered with honeysuckle, clematis and green and black grape vines. In the summer, friends are often entertained there informally, overlooking the pool with the sound of water splashing over rocks, with many uncommon birds — even the odd Kingfisher — swooping down to drink, and with dragonflies hovering and frogs croaking.

"It is a much-loved house and garden but, now that the family have left, it is really too large. We will therefore soon be looking for a suitable garden with a natural pond to develop. A pleasant house will be a bonus!" ■

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## FAMOUS WATER GARDENS

# A FORMAL GARDEN THAT LETS ITS HAIR DOWN

Text and pictures by Barry James, Everglades Aquatic Nurseries

**B**ritain is richly endowed with superb water gardens. Most — like the intricately splendid formal water garden at Blenheim Palace in Oxfordshire — or the more fantasy-like aquascapes at Alton Towers in Staffordshire — form part of a greater whole, open to the public, either on a year-round basis, or at prescribed times. Some only open occasionally.

Abbotswood House in Stow-on-the-Wold, Gloucestershire, falls fairly and squarely in this last category, opening only on a few



chosen days in the year in aid of charity. Ring and check up on these dates . . . and then make a special trip. You won't be disappointed, I assure you.

This incredible garden is somewhat unusual in that it combines both formal and informal styles of landscaping. As is often the case with gardens of grand country houses, it is only part of an estate comprising several hundred acres. Nestling in the glorious Cotswolds, the garden area is set on a steeply sloping hillside, but the house and much of the grounds are on a ▶

Above, Abbotswood House. Below, *Iris kaempferi* (white variety): one of numerous mature clumps on show at Abbotswood.





The herbaceous borders are a blaze of colour and interest during the summer season.



One of Abbotswood's formal ponds photographed looking back at the house.



The candelabra-type blooms of *Primula florindae* along a stretch of the stream.



Informality at the head of the stream.

◀ terraced site which, I suspect, was artificially levelled by the builders.

The land is fortunate in having its own spring, which arises near the peak of the hill and flows downhill for over a mile before discharging into a lake, which, in turn, feeds a small stream. The flow is several thousand gallons an hour at its peak in early spring.

All the water features are fed by this spring, the formal ones through a series of underground pipes, the informal pools being constructed by simply enlarging the stream to form a series of different sized ponds which flow into one another via waterfalls.

The imposing house was designed and built at the turn of the century. The architect was Edward Lutyens and, as in many other

well known houses, he worked with Gertrude Jekyll, the renowned landscape designer.

### Informality-on-the-hill

The informal garden starts high up on the hill. The meander stream is bordered by small trees and shrubs, such as Acers, Magnolias and Azaleas and herbaceous plants including Primula and Astilbes. Lower down, larger pools are bordered with Rodgersias, 'Giant or Prickly Rhubarb' (*Gunnera*) and American Skunk Cabbages (*Lysichitum*). The banks slope up on either side form extensive rock gardens and shrubberies packed with Bamboos and Rhododendrons.

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Top, the rectangular pool with its magnificent views. Above, Skunk Cabbages lining one of the banks of the informal water garden.

◀ The garden is, like the whole Cotswold escarpment, bounded by Jurassic limestone. Lime-hating plants such as Azaleas, Rhododendrons and heathers thrive here. This is only possible, because, at enormous cost, huge pits were dug and filled with peat before planting took place.

The stream then plunges into a beech wood, where, in the shade, dense strands of ferns and other shade-loving plants abound. There are no submerged plants in the stream, probably because being so near the source, it is very cold; the fast, scouring current is another factor not conducive to growth.

There are no fish there either. The Cotswolds is alive with herons, which (I am assured by the gardener) quickly dispose of any fish introduced.

The house is a multi-storey building, the back having extensive views over the countryside. These 'views' are formally laid out in typical Lutyens style. Facing the terrace is a large walled herbaceous garden, which leads onto extensive lawns which house a rectangular formal pool, complete with statuary, and a gazebo.

### Formal ploy

The concrete-lined pool has vast circular plantings of water lilies and marginal beds of *Iris kaempferi*. This pool houses a number of Common Goldfish and Shubunkins, which are seldom seen due, no doubt, to the activities of the visiting herons.

A ploy used by Lutyens on other famous estates is also used at Abbotswood to equally telling effect, in the large formal pool on the west wing of the house. The pool is fed by the spring, the outfall of which is cunningly situated in an arched recess set into the wall of the house.

This pool is planted with a good colour range of water lilies: red James Brydon, pink Mrs Richmond and yellow Marliaceae 'Chromatella'. Gorgeous well established clumps of *Iris kaempferi* of the large-flowered Higo strain adorn the margins. Varieties include 'Moonlight Waves' with semi-double snow-white flowers and 'Crown Princess' which has bright semi-double lavender-blue flowers with a conspicuous yellow blotch. Interspersed with the Irises are *Labelia cardinalis* and *Typha minima* (the Dwarf Rush).

The man responsible for maintaining the several acres which comprise this garden is Dennis Smalley. He is an incredible man who knows every one of the hundreds of species under his care. His small team of full and part-time helpers work exceptionally hard to maintain this garden in its pristine condition.

One thing that puzzled me was the crystal clarity of every pool, with no trace of detritus or algae. On enquiring how this was achieved, I got quite a shock. Apparently, all the pools are emptied and scrubbed twice a year!

A mixture of copper sulphate and bleach is then added to the spring water at source. This then flows through the system, killing off the algae and bleaching the concrete bottoms and walls as it passes. Denis freely admits that these chemicals are added on an 'ad hoc' basis, based on years of experience. Apart from the water lilies being slightly stunted in their growth, there seemed to be no other harmful effects.

Abbotswood was a truly stunning experience for me, not just for the water gardens, but also for the incredible variety of rare trees and shrubs throughout the grounds.

The gardens are open for a few days a year in aid of charity. The estate lies beside the B4068 Stow to Naunton road, just a couple of minutes from the town centre of Stow-on-the-Wold in Gloucestershire. For further details, ring Mr R. F. Scully, 0451 30366. ■

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# MARGINAL HOT SHOTS

ONE of the interesting, though more complex and taxing, jobs of a grower — in particular for the grower of aquatic plants — is the constant striving to keep the market buoyant by introducing new plants, or finding plants that are easily adaptable.

This year there are several plants which can be added to the fast-growing list of newcomers. Three of the most interesting and attractive are *Rumex sanguineus*, *Lobelia siphilitica* and *Iris pseudacorus* 'Flore Pleno'.

Photographs: Anglo Aquarium Plant Co.



## Double Yellow Flag

(*Iris pseudacorus*). 'Flore Pleno'. This newcomer is one of the loveliest Flag Irises with its yellow double flower (June to August) and strong sword-like leaves. Its mature height is over three feet (90cm) and it will be happy in up to 8in (20cm) of water. When planted with *Iris sibirica* 'Caesar's Brother', the two colours and different heights make a spectacular show.

Watch out for more Marginal Hot Shots from David Sheppard of Anglo Aquarium Plant Co. in the next issue of *The Water Gardener*.



## Blue Lobelia

(*Lobelia siphilitica*). A handsome Lobelia which is extremely happy with its feet in water, this elegant plant has lots of lance-shaped hairy leaves and bright blue flowers.

Its flowering season is July/September, but its full foliage makes it a lovely plant for the very edge of the pond or for boggy ground. Its mature height is about 12in (30cm).



## Red-veined Dock

(*Rumex sanguineus*). This is not a true aquatic, but has proved to be very adaptable and is happy in up to 10in (25cm) of water. It has pale green lance-shaped leaves with red stems and veins.

The flower is insignificant and when the plant produces its seed head, it is better to prune this away in order to keep the plant bushy and to retain the colour.

Its mature height is over two feet (over 60cm) and it prefers semi-shade. This plant is already proving to be extremely popular with pond enthusiasts.



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was achievable. Just a glance at the plan and the pictures will be sufficient to convince you that there's no way in which I could present all the innumerable details of design and construction involved in the form of an article.

What I have therefore chosen to do this time round, is concentrate on the installation of the type of pond — a butyl lined design — that is at the heart of this spectacular creation.

#### Installing a lined pond

Once the overall design for a water garden has been approved — and this can be a lengthy process — we can get down to the construction of the pond or ponds. There are five main elements associated with this part of the project:

1. Preparation of a footing level
2. Preparation of the shuttering
3. Construction of the footings
4. Excavation and preparation of the hole
5. Installation of the liner.

#### Preparation of a footing level

If you are building a house and your brickwork isn't level, nothing else will be either. The result would look awful and doesn't bear thinking about. The same applies when you are building a pond, with improperly checked footing levels creating a mess, rather than a masterpiece.

There are several ways in which you can approach this aspect. This is the one I tend to use. It is a technique that enables me to fix the liner on to something solid that has a good face and structure capable of later accepting slabwork, paving, cladding, or even turf over it. One thing you can be sure of is that footings won't sink to expose embarrassing and difficult-to-rectify problems.

Having satisfied myself with the shape and size of the pond (normally marked out with a hosepipe or rope) I set about finding my levels. If you are planning to do this yourself it might be a good idea to hire a Cowley level from your local tool hire company. This is quite an easy instrument to operate and will give you perfect footing levels which, in turn, will give you a perfect water level so that the water snugs tightly just under the paving that overhangs the pond.

Alternatively, a spirit level



Above and right, the mill ruin with its fully functional water wheel.



may be used. Levelling out from a peg in the middle of the pond, use a long straight edge and transfer levels to pegs hammered into where footings are going to be dug.

Your footings should be the width of a shovel and 4in-5in deep, excavated all round the perimeter of the pond shape, checking levels frequently as you go along.

#### Shuttering

Having dug the footing and checked for levels it is time to peg and shutter. Materials:  $\frac{3}{4}$ in  $\times$   $\frac{3}{4}$ in  $\times$  12-14in pegs or similar; 4in  $\times$  8ft lengths of 4mm ply (about £8 a sheet),  $\frac{3}{4}$ in Pozidrive screws.

Hammer the pegs into the inside edge of the footing about 2ft apart, and leave them proud of the ground to be cut off later. Having surrounded the footing, we can now find the required water level. This will be the top of the footing, so set the Cowley level on a tripod in the middle of the undug pond. Then set the staff to the required height, and move around the footing, marking all the pegs with a pencil. When the staff reads level, or if you are using a spirit level, you just set the centre peg and transfer the levels to the outer pegs.

Now overlap the 8ft lengths of ply by about 12in. Keep the edges flush (this will make things level) and screw together. (I use a cordless drill with  $\frac{3}{4}$ in size 6 Pozidrive screws.)

Next place the long length of ply (maybe 8 or 10 lengths joined) around the outside of the pegs. Lift these lengths so that the top of the ply meets up with the pencil mark on the peg. Fix them all the way around the footing, and then cut the top of the pegs off.

#### The footings

Prepare 5  $\times$  ballast to 1 cement mix and fill the footings trench flush to the top of the ply.

Compact the ballast/cement mixture as you go; you may find that with ground levels being slightly out, part of your footing may be above ground level and part below, so make your concrete mix stiffish. Allow the mixture to dry for one to two days.

#### The hole

The next trick is to dig the hole. By now, the footing should be hard. Since you'll need to excavate to a depth of approximately 3 to 3½ft, dress the hole down neatly as you go, usually removing a shovel depth at a time (12in approx.). Think of bread and butter construction in your mind. It is not necessary to dig more than 12-14in below the top of the footing in order to allocate marginal plant beds.

Once the hole is dug down to the desired depth, it is time to try your hand at sand trowelling. I tend not to use underlay or old carpets, preferring sand instead

because sand is permanent. First, remove shuttering, and then spread building sand in piles all around your hole. Next, trowel it out to about 2in in depth. It is easier than you think, honest! Finally, bring the sand right up to the top of the footing.

#### The liner

Stretch the liner out in its length and lift it over the longest part of the hole. Make sure it overhangs the footings at the widest point by 6in. Place a hosepipe in the pond and add a few inches of water. This will enable you to pull the liner about; it is almost rather like ironing a shirt.

Get the creases and folds in the right places so the water pressure holds them flat. Don't forget you are going to be able to see everything in this pond, so let's keep the standards up.

At this stage, I then load the pond with water to about 9in from the top. I then stretch the liner onto the top of the footing and secure it with  $\frac{3}{4}$ in clout nails every 12in and about 6in from the internal face. Next I cut the excess liner off by scalloping it in between the nails. This should leave enough exposed footing to give a good bond on the edging stones when they are subsequently laid on mortar.

In the event of a raised pond, a footing still applies, and the height or depth is obtained through block, brick or stone work where the level is transferred to the top.

Whether you opt for a totally sunken pond or a raised one, you will, at least, have completed the central component of your water garden which you can then landscape (using much of the soil removed from the excavation) and adapt to exploit the qualities of both the pond and the rest of your existing garden as you think best. The permutations are endless and it is my hope that the pictures accompanying this article will help to set you off along one or two exciting paths towards achieving the water garden of your dreams. ■

Mark Fisher is the proprietor of Everton Water Gardens, in Lymington, Hampshire. He specialises in the design and construction of customised water schemes.

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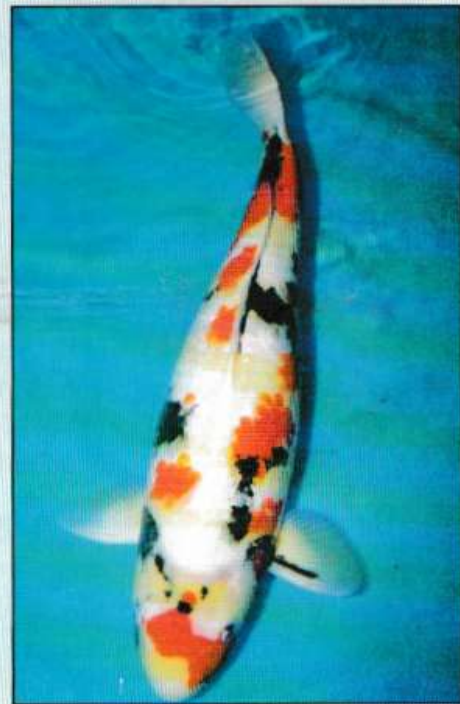


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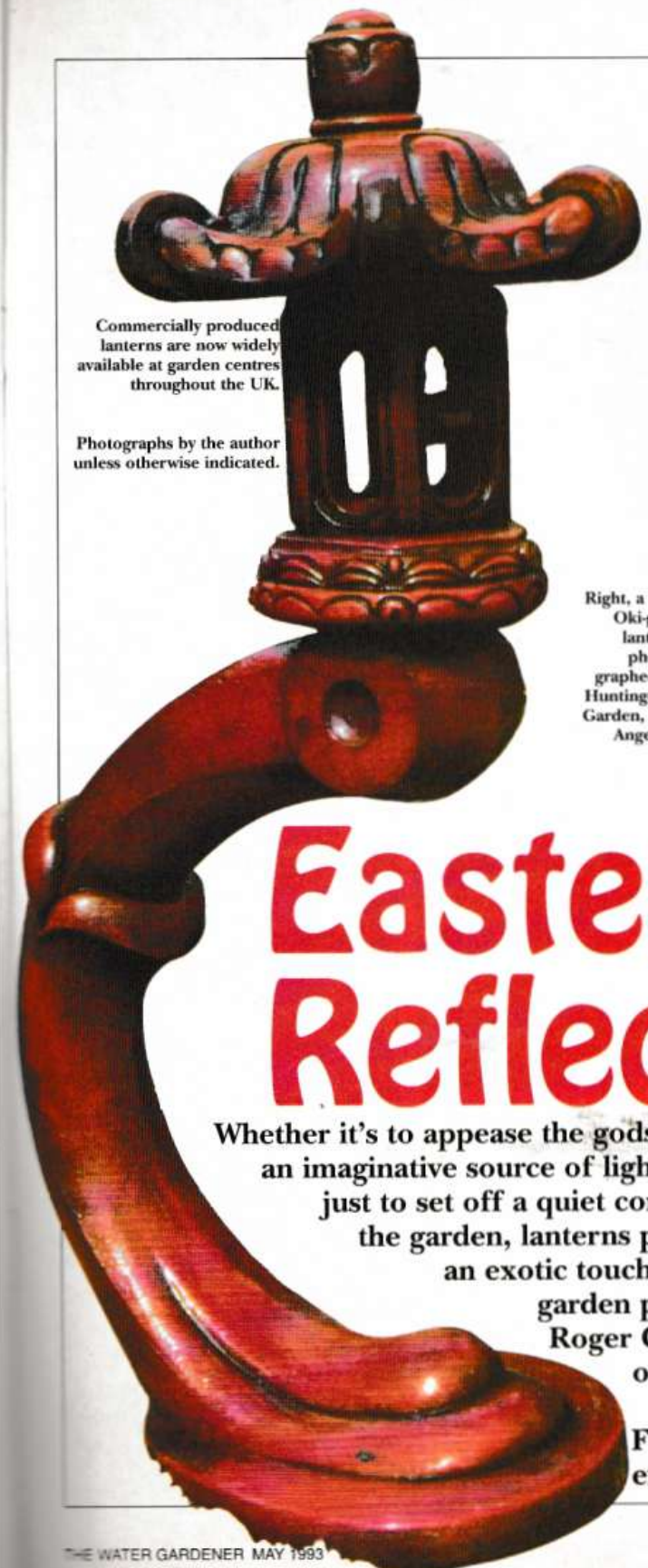


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Commercially produced lanterns are now widely available at garden centres throughout the UK.

Photographs by the author unless otherwise indicated.



Right, a tiny Oki-gata lantern photographed in Huntingdon Garden, Los Angeles.

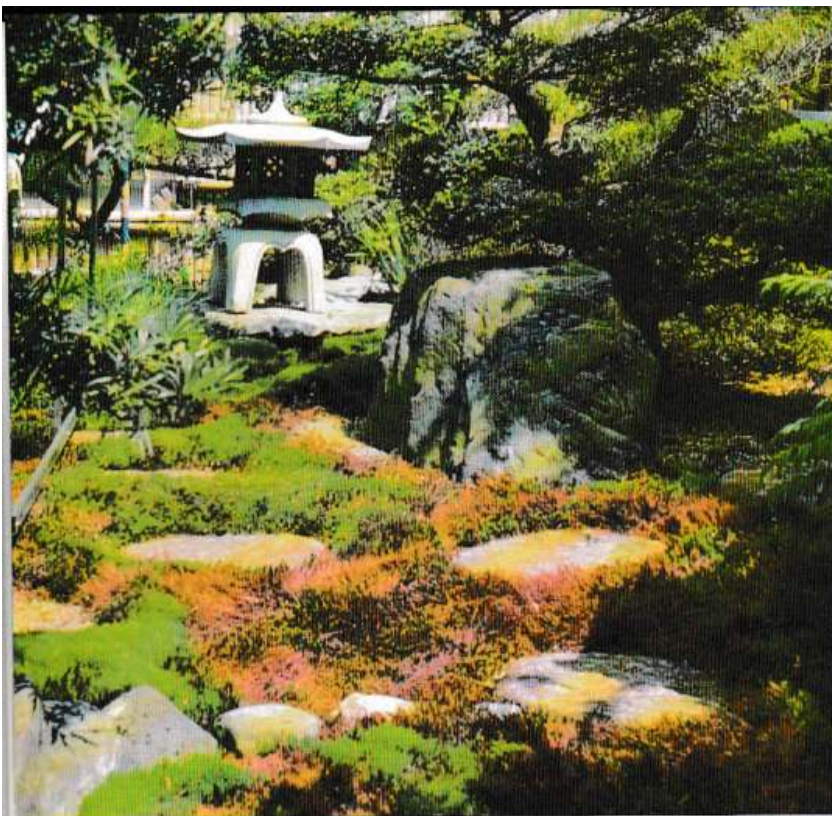
# Eastern Reflections

Whether it's to appease the gods, offer an imaginative source of lighting or just to set off a quiet corner of the garden, lanterns provide an exotic touch to any garden plan, as

**Roger Cleaver of Three Spires Fishcare explains**

**A**s water gardeners we owe a great deal to the Orient. The development of ornamental fish began there and several of our commonly used plants were originally introduced from the East. In recent years, another feature of Oriental gardens has become popular in the West: the use of stone lanterns, often associated with water features, particularly in Japan.

Although we tend to think of stone lanterns as being Japanese, they actually originated in India. First used as fertility symbols, they spread to China, where they were eventually linked with the Buddhist religion, initially as monuments in cemeteries. The use of lanterns spread with the growth of Buddhism and were introduced into Japan, not from China, ►



*Tachi-gata*, or pedestal, lanterns, are often overpowering, owing to their size, which is normally about one and a half metres in height, though sometimes they run to three metres or more. These lanterns are normally built up in five parts, which symbolise the five elements from which everything in life derives: the *Go-rin*, (earth, water, fire, air and the ether). The five parts comprise the shade (*kasa*), the flame bed or light box (*hibukuro*), the central section (*chudai*), the stem (*sao*), and the base (*gedai*).

The *Tachi-gata* style is one of the oldest, and the basic scheme was developed by the Tea Masters and stone carvers into many forms. Often, the base and central section were carved with petal motifs, while the upper part was carved to look like a lotus flower. Seldom used by ponds, this type usually forms a central, impressive focal point in the garden.

In the *Ikekomi-gata*, or buried lantern, the base is missing and the whole of the shaft or stem appears buried in the ground. Although they look good anywhere, they were often used to light behind *Tsubbai* (water basins) in tea gardens. They also look good overhanging a pool.

To use lanterns in your garden, try to think along Japanese lines: think *simple*. Elaborate lanterns should be made a feature in their own right, as it is difficult, in most settings, to create the correct planting to do them justice.

Simpler styles, on the other hand, should be made the principal element in a larger arrangement. They look particularly good if a small tree or shrub can be planted behind them and the odd branch is then trained to hang across the front, gently to mask part of the lantern. The use of a small rock as a balance against the height of the lantern can also be extremely effective.

Wherever you decide to use lanterns, you should take care to see that they sit on a very firm and sturdy footing. To avoid distracting from the lantern itself, this footing should be set just below ground level. This is particularly important if a lantern is being sited within a pool. In such surroundings, the lantern should give the appearance of just rising from the water.

Obviously, Japanese lanterns were initially meant to give light, so some people install electric bulbs inside the 'light box', but this gives a harsh illumination. It is often better to revert to the old fashioned candle for a softer, more natural, light. Paper or glass screens can be fitted to the light box in order to prevent the wind from extinguishing the candle, as well as to help soften the light. Few things can create a more pleasant, relaxing mood on a warm, still, summer evening than a lantern flickering away behind a light screen of leaves.

Providing you keep your ideas simple and do not try to include too many styles or too large an ornament, then lanterns can create an intriguing, interesting, Oriental touch, both on the surface of your pool and in your garden, whatever its size, shape or location. ■



In *Ikekomi-gata* lanterns, the base is buried and the 'stem' appears to grow out of the ground. This impressive model was photographed in that most un-Japanese of settings, San Diego's Sea World. Photo: John Dawes.

The Tea Garden at Tado in Japan has some fine examples of lantern, in this case, a *Yukimi-gata*, or 'snow viewing' lantern within a truly Oriental garden setting.

A snow viewing lantern in typical location with its feet in water.



◀ should be classed as stone towers and not as lanterns.

The *Yukimi-gata* are the lanterns most often seen, particularly around pools. They are referred to as 'snow-viewing' lanterns because of the way their large flattish roof retains the snow. These lanterns usually consist of three sections, each having a symbolic significance. The upper part represents heaven, the central part with the flame represents man, and the base, the earth. The base usually carries three or four legs and these are often placed within the pool. As this type of lantern is often fairly small, it is well suited for use in most sizes of garden.

*Okigata* lanterns are small and are usually set in the ground at the sides of pools or paths to mark the way. Being small and unobtrusive, they can be used in the smallest garden.

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# an A-Z of water gardening

**a**



## AERATION

Quite probably, many pond-owners haven't ever thought about the first of our alphabetical subjects — **AERATION** — assuming it to be much more the prerogative of the indoor fishkeeper.

Oxygen levels vital to the fish are at risk, both from organic decomposition (decaying plant matter, uneaten food, etc) and from direct competition from an abundance of plants, especially at nights.

Fountains and waterfalls will assist greatly in aerating a pond. Fountains can be quickly turned on during thundery weather when oxygen levels in the water will be naturally low anyway. Any form of water movement will aerate to some degree or another, even returning water from an external filter system.

As with all aspects of

**Pond aerators (note the large flat airstone) will help keep oxygen levels within safe limits.**



DAVID FLETCHER

All you ever wanted to know about water gardening — and a few you should know — as Dick Mills brings you a regular a-z guide to water gardening.

fishkeeping, the rule is to take note of visible signs the fish may be giving you — gathering at the surface isn't always a plea for food or fuss — they could be begging for air!

## ARUM LILY

Well known for making appearances at solemn occasions such as funerals, the **ARUM LILY** (*Zantedeschia aethiopica*) makes a much happier and decorative addition to the pond, where it can be cultivated either in the water itself or in a poolside bog garden.

The Arum Lily, or Lily of the Nile, is a member of the Araceae family and comes from Africa. It grows to around three feet (90 cm) in height.

Despite its 'tropical' pedigree, it will thrive in temperate countries and the variety *Z.*



BARRY JAMES

**The Arum Lily is an elegant plant which is not as often associated with water gardening as it should.**

*aethiopica* 'Crowborough' is said to be hardy, while *Z. aethiopica* 'Green Goddess' is taller, with green tips to the flowers.

Speaking of flowers, the true flower part of the Arum is the yellow centre, the familiar white waxy trumpet shape is really a modified leaf called a spathe. The leaves are arrow-shaped and waxy.

**b**

## BOG ARUM

The **BOG ARUM**, (*Calla palustris*) is a separate plant altogether, coming from Europe, northern Asia and



BARRY JAMES

**The Bog Arum bears a superficial similarity to the Arum Lily.**

North America. Needing much shallower water than the Arum Lily (0 to 3 inches), it spreads quickly, via a creeping rhizome, reaching a height of around 6 inches.

It takes its popular name from its appearance, which resembles a miniature Arum Lily. It bears red berries, the result of pollination by snails, and the fresh rhizome is poisonous although apparently not so when eaten (ground up and cooked) by Laplanders!

## BLANKETWEED

**BLANKETWEED** probably comes in for as much abuse, if not more, than any comparable garden flowerbed weed. Its choking presence not only looks a mess, but it will also coat the plants and even trap

**Clumps of blanketweed in a shallow pond.**



JOHN DAVIS

# an A-Z of water gardening

small fish.

The combination of clear water and plenty of sunshine make for ideal blanketweed growth, and so any well-maintained, well-filtered pond in summer is almost asking for trouble!

Controlling blanketweed calls for constant vigilance. It can be kept down to a minimum by regular removal sessions with a twisted stick (or even a lawn rake); proprietary algicides will also kill it, but in these instances, all dead material must be removed to prevent water pollution occurring.

A three-monthly period of dosing the pond with a 'pond balancing' treatment is an alternative method which works by depriving the plant of its ideal water conditions and essential foods.

## BOG GARDENS

Creating a **BOG GARDEN** is easily accomplished when installing a liner pond by simply over-ordering the amount of liner. The excess requirements to that needed by the pond itself is not trimmed off, but allowed to lay around the pond in an excavated trench. Water (or extra moisture from the pond) can be encouraged to fill this trench by using capillary mats draped over the pond's lip to draw water out of the pond.

The alternative method of creating a bog area, by simply having an extra-wide shelf within the perimeter of the surround of the excavated pond, but partitioned off from it by a wall of stones, may seem to be very practical, as water from the pond will naturally flood the bog, but conversely (as is usually the case) soil from the bog is far more likely to discolour the pond water instead!

## BULLRUSHES

**BULLRUSHES** are not what they seem, and certainly not what most people think they are! The reed-like plants with the flat green leaves and familiar brown cylindrical spikes



JOHN DAVES

The Dwarf Bullrush is an ideal subject for the small or medium-sized pond.

are not Bullrushes at all, but Reed-Maces (*Typha*) of the Typhaceae (Cattail) family.

The two commonly available species are *T. latifolia* and the smaller Dwarf Rush, *T. minima*.

True Bullrushes are from the Sedge family, the Cyperaceae, and have cylindrical leaves (aquarium keepers will be familiar with *Eleocharis* — Hairgrass — another member of the family) and, depending on species, often striped with dark and light green, either longitudinally (*Scirpus tabernaemontani* 'Albescens'), or horizontally (*Scirpus tabernaemontani* 'Zebra').

The Sedges, like the Reed-Maces, are excellent mud and silt collectors, which may or may not be a virtue in ponds. Their natural tendency to spread and invade every available space may be curbed by planting in easily-managed containers, such as lily baskets.

**c**



## CASCADE

A **CASCADE** is a small aqueduct delivering water from a higher point back into the pond; cascades are often incorporated in an external filtration system.

## COMET

A **COMET** is a variety of single-tailed Goldfish; the tail is often almost as long as the body (see **Fish Focus** in this issue).

## CONCRETE

**CONCRETE** is a basic material for pond construction; it needs to be fully waterproofed once set and also sealed to prevent lime leaching out into the water.

Concrete is best used in formal, straight-edged pond designs, but it can be worked into any shape.



PAULINE HODGKINSON

The spread of plants can be kept under control through the use of containers.

## CONTAINERS

**CONTAINERS** are often referred to as planting baskets. They are ideal, both for restricting rampant spreading plants, and for ease of movement of planted specimens. New types may be used without the need for hessian linings.

**d**



## DAMSELFLIES

**DAMSELFLIES** are small

airborne insects which visit the water in order to lay their eggs beneath the surface.

They can be distinguished from dragonflies — to which they are related — by their folded wings when at rest. Damselfly are also smaller than dragonflies (see also **Pond Dipping** in this issue).

## DEPTH

Water **DEPTH** is a most important dimension in the pond. Insufficient depth leads to overheating in summer and freezing solid in winter.

Minimum depth should be, at least 18 in (49 cm) for most fish and around 5 ft (1.5 metres) for Koi.

## DRAINS

**DRAINS** are very practical 'accessories', but not always planned right at the start. They can be installed without too many complications into liners as well, though traditionally, they have tended to be associated with concrete and pre-fabricated ponds. Drains must lead to a soakaway pit.

## DUCKWEED

**DUCKWEED** is a small floating plant, *Lemna*, which soon covers the whole surface of the pond unless: (a) it is regularly netted out, or (b) vegetarian-minded fish are kept.

**e**



## ELECTRICITY

This very necessary amenity should be used with utmost caution. Supply cables should be armoured and buried.

Residual current devices (RCD's or circuit-breakers) should be employed and all connections made in weatherproof materials. If in doubt, consult a qualified electrician.

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Dick Mills reviews the latest in water gardening products

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**CYCLONE SEDIMENT SETTLEMENT FILTERS** and innovative spherical **BOTTOM DRAINS**, are typical designs, both well-tested under pond conditions before full-scale production.

**EXTERNAL FILTERS** feature sloping floors for efficient drainage and dirt collection; construction using welding



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Blue circular **VIEWING TANKS** (for Koi), made from polythene, measure 28in by 16in deep, stack easily when not in use. **PVC FLANGES**, accommodating 1.5in, 2in, 3in and 4in pipes, are available for low-pressure drainage, but transformation fittings can be supplied to upgrade them for high-pressure working.

Details from: **Bob Pateman Enterprises, 36 Trinity Road, Billericay, Essex CM11 3RT** (Tel: 0277 623027).

## NEW TRADITIONAL FILTER

While most water gardeners agree that pond filtration is a necessity, some may not have room for an external filtration system, nor want to see the equipment more than is necessary.

**Fisher Pond Products** have solved both these problems by designing the **SPIDER FILTER**, a filter that goes in the pond itself, has no working parts and needs very little maintenance. It works on the well-known (to aquarium keepers, at least) biological principle where water is drawn through the substrate to maintain well-oxygenated conditions in which bacteria break down any toxic ammonia-based wastes into less harmful substances.

Easily connected to any submersible pump, extra units can be linked together for larger ponds. According to the manufacturers, cleaning is only required every 2-3 years so

that leaves plenty of time for sitting by the pond watching the fish.

Details from: **Fisher Pond Products, The Round Lodge, Newlands Manor, Everton, Lymington, Hants SO41 0JH** (Tel: 0590 644405).

## SMALL BEGINNINGS

Starting off water gardening in a small way is now both possible, and relatively inexpensive, with a **ROCK POOL** from **Lotus**.

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Details from: **Lotus Water Garden Products Ltd, P.O. Box 36, Junction Street, Burnley, Lancashire BB12 0NA** (Tel: 0282 20771; Fax: 0282 412719).

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Water lily planting baskets, along with other aquatic planting containers have, until recently, been traditionally lined

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Available from **Underworld Products** (see below).

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Available from: **Underworld Products, Units 1 & 2, Belton Road West, Loughborough, Leicestershire LE11 0TR** (Tel: 0509 610310, Fax: 0509 610304).



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# fish focus/*the goldfish*

## THE MOST POPULAR PET

**I**f Goldfish were human, they would be universally regarded as bald toothless wonders! They have scaleless heads, hence the 'baldness', and no real teeth. In fact, they don't even have a stomach as we know it. Yet, despite these apparent drawbacks, Goldfish enthral countless millions of admirers the world over. Not only are they the most popular of fish, but the most popular of all pets, including dogs and cats.

Few people can deny that a good Common, or Ancestral Goldfish presents a most exciting figure, resplendent in its blood-orange to red colouring, and with a perfectly proportioned sleek profile. Such a form has made it the ideal fish for the garden pond, and it is therefore hardly surprising that thousands upon thousands of these splendid, yet often underrated fish, can be found throughout the UK and further afield.

While everyone is conversant with the shape and colour of the Common Goldfish, few are aware of the myriad varieties which are available today. Many of these (and it is said that there are over 120 recognised types of Fancy Goldfish) are better-suited to life in an aquarium, where their round-bodied form and their often extravagant finnage can be better appreciated. There are, however, several varieties of Fancy Goldfish which have retained the long body of their 'Ancestral' heritage, and these make excellent pond fish.

### COMMON GOLDFISH

The term 'ancestral' is becoming more popular as a description for the erstwhile 'Common' Goldfish and, in my opinion, is a far more fitting title for a fish which has contributed so much to the fishkeeping hobby. The term is also used advisedly: in its natural surroundings, the forerunner of the Goldfish, *Carassius auratus*, is olive-brown in colour, a trait which becomes apparent when breeding Goldfish, whose fry are olive-brown

before developing into the golden colouring with which we are all familiar.

The sleek, long body of the Ancestral Goldfish makes this the perfect pond fish. Not only does a number of Goldfish flitting around the pond make a splendid sight, but these, and to some extent their long-bodied derivatives, are also hardy creatures which breed well.

The scales of the Ancestral Goldfish are bright metallic red; while there are some attractive variations with all-over yellow scaling (Lemon Goldfish), silver, and even red-and-white (Sarassa). The finnage should be fairly short and rounded, although Goldfish acquired from a petshop may well have elongated fins, with single caudal (tail) and anal (belly) fins.

### COMETS

A further popular derivative is the Comet. This is an equally attractive fish which prefers plenty of pond space to take advantage of its fast, sleek form. Slightly slimmer than the Ancestral Goldfish, the Comet also possesses longer finnage, with a highly-developed tail fin, which gives the fish its name. This fin is forked when viewed from the side and, ideally, appears as an open pair of scissors; the length of the caudal fin should equal that of the body.

Comets are usually metallic red in colour, but are also popular in red-and-white, or Sarassa, colouring.

### SHUBUNKINS

Occasionally, multi-coloured, or *calico* coloured Comets are available, often sold in garden centres as Shubunkins.

The Shubunkin has become a specialist fish in its own right, so much so that I have often heard people describe their pond as containing Goldfish and Shubunkins in it. ▶

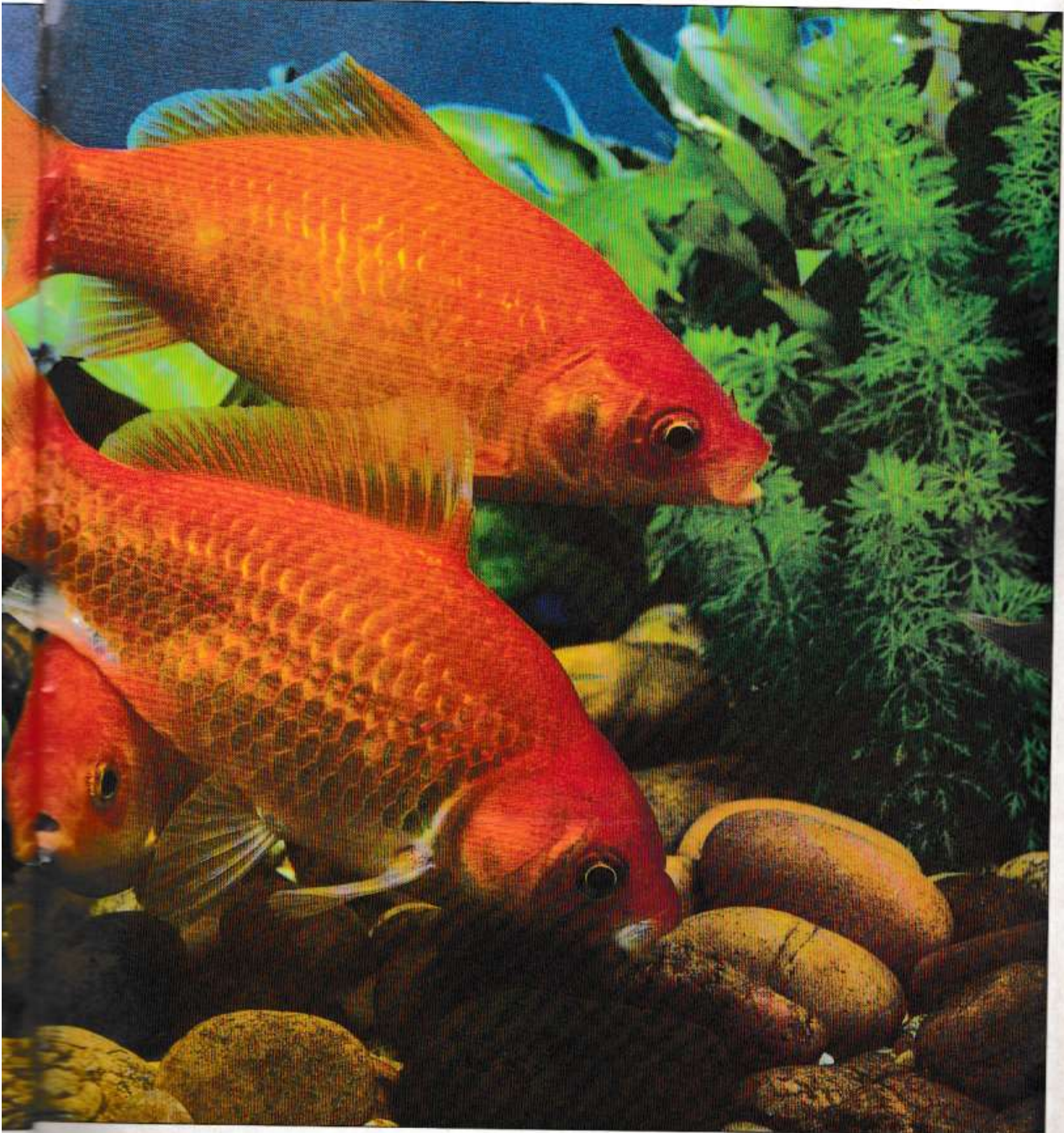
**The most popular pet in the world: the 'uncomplicated' orange-coloured Common or Ancestral Goldfish.**



Fortunately, there's more to goldfish than being a frightened prize at a hoopla stall. Stephen Smith gives a guided tour around the world's most unlikely fishy favourite

# T IN THE WORLD

Photographs: Max Gibbs —  
The Goldfish Bowl, Oxford.





Top, Sarassa Comets are strikingly coloured fish suitable both for ponds and aquaria. Above, the London Shubunkin is indistinguishable from the Common Goldfish in body shape, but has different coloration.

Above, a golden Comet — sleek and fast, and hardy. Left, Bristol Shubunkins have long flowing tails. Otherwise, they are, basically, similar to their 'London' cousins.

## fish focus! the goldfish

◀ (Shubunkins are Goldfish, after all).

The colouring of the Shubunkin is most attractive, with matt scales (occasional metallic scales are quite acceptable — unless the fish is destined for the showbench). These are coloured red, yellow, and brown on an all-over background of light blue, and finished with a black speckling over the whole of the body and fins of the fish.

The London Shubunkin is identical in shape and finnage to the Ancestral Goldfish; while members of Bristol Aquarists Society have, over a period of three decades, perfected the Bristol Shubunkin. This is slimmer in the body and has longer finnage. The most distinctive feature is the shape of the caudal fin, which has rounded lobes forming a shape not dissimilar to the letter B. Good-quality Bristol Shubunkins are highly-prized by Goldfish enthusiasts, and have been achieved as a result of hard work and dedicated breeding.

### OTHER VARIETIES

Two additional varieties which deserve some attention, though they

are not all that commonly seen in the UK, are the Wakin and the Jikin (pronounced Jee-kin). These are long-bodied varieties with twin tails.

I prefer to keep these in a pond environment, to which their long-bodied form is well suited. However, the characteristics of their caudal fins mean that they do not swim quite as swiftly as their sleeker counterparts, so I would advise that these varieties be kept in a separate pond.

Both types tend to display a fatter body than the Ancestral Goldfish. The Wakin is reputedly the traditional Goldfish of Japan and is prized for its paired, fan-shaped, tail fins. Although not as pronounced as the Fantail-type Fancy Goldfish, their fins are usually fully-divided, although webbed caudal fins are also commonplace. Being twin-tailed, the Wakin has paired anal (belly) fins, while the remaining fins are short and slightly rounded.

The colouring of the Wakin is traditionally all-gold or Sarassa, though

I have recently encountered Calico Wakins, which make extremely attractive fish.

The Jikin is a recent introduction to the UK Goldfish scene. This variety was developed originally in Japan and hosts a most distinctive tail formation. This fin is squared and completely divided, so much so, that each half is perpendicular to the tail root (caudal peduncle), while the anal fins are paired.

A perfectly coloured Jikin is most difficult to obtain; breeders can only strive towards a silver-white metallic scaled body with red finnage and red lips; imperfect specimens show red colouring splashed over the body, but nevertheless still make attractive pond fish.

A word of warning about keeping other Fancy Goldfish in the pond: these usually have long fins, or very short fins, or even lack some finnage. Thus, not only is locomotion not so well refined, but long finnage, in particular, can be susceptible to damage in a pond, and this can be more difficult to monitor than in the aquarium. ■



# TOP 10 TIPS

## 1 FEEDING



Don't overfeed your fish. They should rise to the surface of their own accord at mealtimes.

Avoid overfeeding pond fish. Feed them on a good quality balanced diet once or twice each day, taking care to check that they consume all of the food given within 3-4 minutes. Uneaten food should be removed, as it will pollute the water.

## 2 STOCKING

Do not overcrowd your fish. A stocking level of approximately 2-3 inches of fish per square foot (900cm<sup>2</sup>) of water surface area will help your fish to remain healthy and easy to look after.

## 3 BROWN WATER

Brown cloudy water is usually due to debris being disturbed by the fish or to water movement. To correct, remove excess debris from the pond bottom and make sure planting baskets have a layer of gravel over the soil.

## 4 AUTUMN CLEAN

Changing 20% of the pond water in the autumn and, at the same time, remove any excess debris to ensure that your pond



DR DAVID POOL

by  
**DR DAVID POOL**  
of the Tetra Information  
Centre

Oxygenating plants (bottom left) should complement the pond — not overrun it.



TETRA

is in the best possible condition to allow the fish to survive the rigours of winter.

## 5 OXYGENATING PLANTS

Oxygenating plants should be trimmed once or twice during the summer to prevent them outgrowing the pond. Cutting them back to about 30cm (12 inches) lengths is ideal and will promote healthy growth.

Always remove leaves and debris from ponds in autumn.

## 6 LILY FEEDS

In common with most plants, water lilies require fertilisation if they are to grow to their full potential. The regular use of lily substrate fertilisers can have impressive results, increasing the number of flowers by a factor of 2-3.

## 7 SAFE WATER

Make your tapwater safe. Tapwater contains chlorine which is dangerous to fish, plants and filter bacteria. Always add a dechlorinator to your tapwater to make it safe before introducing it into the pond.

## 8 LILY SPLASHES

Don't splash the lilies. Splashes of water falling on the leaves or in the blooms of water lilies will

stop them growing and result in damage. Take care when adding water into the pond, and position lilies away from fountains or waterfalls.



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Splashes from fountains will have an adverse effect on the growth of water lilies.

## 9 FILTER CLEAN-OUT

External box filters are very popular and effective. Occasional cleaning is necessary to prevent the filter blocking. Always use old pond water, as the chlorine in tapwater could kill the helpful filter bacteria, leading to water pollution.

Always test the pond water regularly to help you detect and correct problems before they affect the health of your fish.



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## 10 WATER TESTS

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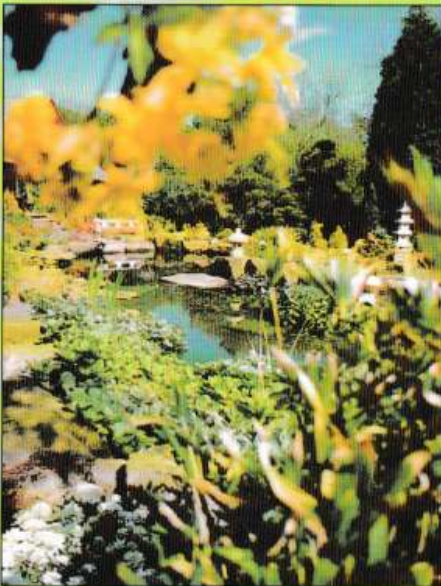
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